(26,528)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1918.

No. 456.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN, PETITIONERS,

vs.

JOHN A. WINTROATH.

ON WRIT OF CERTIORARI TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

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Court of Appeals of the District of Columbia, October Term, 1917.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

Appeal from the Commissioner of Patents.

(Interference No. 39,684.)

Filed July 30, 1917. Printed August 29, 1917.
Office Supreme Court, U. S. Filed May 21, 1918. James D. Maher, clerk.

1 Court of Appeals of the District of Columbia.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

In re Interference No. 39,684.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

To the Court of Appeals of the District of Columbia:

Your petitioner, John A. Wintroath, of Los Angeles, California, respectfully represents:

That he is the original and first inventor of certain new and useful improvements in Well Mechanism.

That on November 25th, 1913, in the manner prescribed by law, patent #1,079,679 was issued to him by the Commissioner of Patents for the said invention.

That thereafter, to wit, on the 21st day of March, 1916, an interference proceeding was instituted and declared between his said pat-

tent and a pending application of Chapman and Chapman, serial number 38,254, filed July 6th, 1915, for a similar invention.

That the subject matter of said interference as set forth in the official declaration was as follows:

1. In a deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

2 2. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into a substantially straight vertical line, and means for supplying the fluid under pressure to said fluid bearing independently of the action of the pump means.

3. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

That thereafter, to wit, on the 8th day of July, 1916, the case having been submitted upon the preliminary statements, on motion by this petitioner for judgment, the Examiner of Interferences rendered a decision awarding priority of invention to your petitioner.

That pursuant to the statutes and the rules of practice in the Patent Office in such case made and provided, Chapman and Chapman appealed from the said adverse decision of the Examiner of Interferences to the Board of Examiners-in-Chief, and the case having been argued and submitted to said board, a decision was rendered by said board on the 18th day of November, 1916, affirming the decision of the Examiner of Interferences.

That thereafter, pursuant to said statutes and rules, Chapman and Chapman appealed from the said adverse decision of the Board of Examiners-in-Chief to the Commissioner of Patents, and the same coming on to be heard and having been argued and submitted, a decision was, on the 18th day of June, 1917, rendered by the Commissioner adverse to your petitioner, reversing the decision of the Board of Examiners-in-Chief and awarding priority of invention to the said Chapman and Chapman.

That on the 5th day of July, 1917, your petitioner, pursuant to sections 4912 and 4913, Revised Statutes, United States, gave notice to the Commissioner of Patents of his appeal to this honorable court from his decision awarding priority of invention to said Chapman and Chapman, as aforesaid, and filed with him, in writing, the following reasons of appeal:

3 1. The Commissioner erred in awarding priority to Chapman and Chapman.

2. The Commissioner erred in holding that the question of diligence by Chapman and Chapman in making the claims in issue should be decided by analogy to Rev. Stat. Sec. 4883 rather than to Sec. 4894.

That the Commissioner of Patents has furnished a certified transcript of the record and proceedings relating to said interference case, which transcript is about to be filed by the Patent Office with the clerk of this court.

Wherefore your petitioner prays that his said appeal may be heard upon and for the reasons assigned therefor to the Commissioner, as aforesaid, and that said appeal may be determined and the decision of the Commissioner be revised and reversed, that justice may be done in the premises.

JOHN A. WINTROATH,
By SYNNESTVEDT & BRADLEY,
His Attorneys.

PAUL SYNNESTVEDT,
Solicitor and of Counsel.

Dated July 28th, 1917.

Check for the docket fee of $15.00 is hereby attached.

[Endorsed:] John A. Wintroath, Appellant, vs. Matthew T. Chapman and Mark C. Chapman. Interference # 39,684. "Well Mechanism." Petition for Appeal. Paul Synnestvedt, 1201 Chestnut Street, Philadelphia, Pa., Solicitor for Wintroath.

2–390.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the Records of this office of the Record for the Court of Appeals of the District of

Columbia in the matter of Interference Number 39,684, Wintroath vs. Chapman and Chapman, Subject-Matter:—Deep Well Pumps.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at tht City of Washington, this 27th day of July, in the year of our Lord one thousand nine hundred and seventeen and of the Independence of the United States of America the one hundred and forty-second.

[Seal Patent Office, United States of America.]

F. W. H. CLAY.
Acting Commissioner of Patents.

4 Mail Room,
Dec. 2, 1912,
U. S. Patent Office.

Division 9,
Dec. 4, 1912,
U. S. Patent Office.

734,649, Paper No. 1.

Petition and Power of Attorney.

To the Hon. Commissioner of Patents:

Your petitioner *John A. Wintroath, whose Post-Office address is 900, 910 Santa Fe Ave., Los Angeles, Cal., a* citizen of *the United States* residing at *Los Angeles* in the County of *Los Angeles* and State of California, prays that letters patent may be granted to *him* for the [improvements in]* *Well Mechanism* set forth in the annexed specification, and he hereby appoints [the firm of Townsend Bros., the individual members of which firm are]* James R. Townsend [and Francis M. Townsend]* of Los Angeles, California *his* attorney [s]* with full power of substitution and revocation to prosecute this application, to make alterations and amendments therein, to receive the patent and to transact all business in the Patent Office connected therewith.

JOHN A. WINTROATH.

Specification.

To all whom it may concern:
Be it known that

I, John A. Wintroath, a citizen of the United States, residing at Los Angeles, in the County of Los Angeles, and State of California,
have invented new and useful Well Mechanism, of which the following is a specification.

5 In pumping wells used for withdrawing water or other liquids from the earth a casing is sunk, often several hundred feet into

[*Words and figures enclosed in brackets erased in copy.]

the earth, and at the bottom of said casing a rotary pumping means
is installed for raising the water or other liquid to the surface.
A long power shaft, driven from above, extends down through the
casing and transmits power to the rotary pumping means below. The
means for supporting said rotary pump and the long power shaft involves considerable inconvenience.

In some pumping systems the rotary pumping parts and power

partly
Per C. shaft are ^ supported from below by means of a delicate hydraulic
bearing located at the bottom of the casing, and said hydraulic bearing is operated by the same water pumped through the well. This construction, however, is subject to the following inherent defects:

The bearing, being operated by well water, which obviously carries some sand and grit from its origin, soon rusts and wears, and its operation becomes quite unsatisfactory.

Also said delicate hydraulic bearing, being located at the bottom of the well casing, is practically inaccessible; and due to the frequent repairs required on same, its up-keep involves considerable annual expense.

Also the long heavy power-transmitting shaft tends to bend or buckle when supported from below, and this tendency materially
Insert C'. impairs its power-transmitting capacity. ^ C'
Insert A'. A'.>

Sub. A².

My invention relates to a novel combination of pumping elements and includes novelly constructed and novelly positioned bearing means for the pumping elements, said bearing means being
accessably located above said pumping elements, and whereby the
aforesaid inherent defects of other bearing means are obviated.

[Matter enclosed between rules erased in copy.]

An object of the bearing means embraced in my invention is to reduce the friction created by supporting the rotary pumping parts and the vertical power shaft. To this end I provide the novel fluid operated bearing hereinafter described.

Another object is to provide durable and efficient bearing means for supporting the vertical power shaft and the rotary pumping parts, which bearing shall be easily and conveniently accessible at the surface of the earth. To this end I provide above near
Per C. the pit casing, and [at]* the upper extremity of the power transmitting shaft, a novelly constructed bearing which may be readily dismantled for inspection and repairs. As will be hereinafter 6
described the vertical power shaft and the rotary pumping means are suspended from the bearing, and the buckling and weakening
Insert D'. tendency of said power shaft is thereby obviated. D'

Another object is to avoid excessive wearing and rusting of the bearing parts and at the same time to efficiently lubricate the same. To this end I use lubricating oil under pressure for operating the novel fluid bearing hereinafter described.

Other objects may appear from the following detail description taken in connection with the drawings.

The following drawings illustrate my invention.

Figure 1 is an elevation partly in axial section through the bearing embraced in my invention and shows the same attached to the upper end of the pit casing. The axial section is taken through the whole bearing casing, but only through the left half of the bearing core while the right half of said bearing core is shown in full.

Fig. 2 is a plan section taken on line x^2-x^2, Fig. 1. The left half of the roller casing has been removed in order to expose the position of the roller beneath.

Fig. 3 is a plan section on line x^3-x^3, Fig. 1.

Fig. 4 is an end view of one segment of a split collar used in my bearing.

Fig. 5 is a plan view of the split collar shown in Fig. 4.

Fig. 6 is a fragmental plan view of a balancing plate, wear plate, and packing ring used in my bearing.

Fig. 7 is an axial section of the same parts shown in Fig. 6.

Fig. 8 is a fragmental view illustrating the well mechanism in place and broadly shows the novel combination of parts embracing my invention.

Fig. 9 is a plan view of one of the bearing castings.

Into the earth 1 is sunk a cylindrical drum 2 shown in Fig. 8

[*Words and figures enclosed in brackets erased in copy.]

and termed a pit casing. At the lower extremity of pit casing 2 the coupling member 3 connects said pit casing to a well casing 4,
said well casing having a lower screened and perforated portion 5;
and at the upper extremity of said pit casing the flange plate 6 connects said pit casing to a discharge Y 7. The well casing 4 projects down into the water bearing sands and gravels and is adapted to form a well reservoir from which the rotary pumping 7
means 8, located in pit casing 2, and usually near the bottom thereof, may draw its water supply.

The pumping means 8 comprises a stationary pumping casing 9

Insert C^2. and rotary impeller 10 [.]* $\wedge$ C^2

At its lower end the pump casing 9 is connected with a suction pipe 11 extending into the well casing 4 and being adapted to con-
duct water up to the pump casing; and at its upper end said pump
casing is connected to a water conduit 12, the latter serving to conduct the pumped water up to the discharge Y 7. This water conduit 12 is rigidly connected to the discharge Y above, and in an obvious manner serves to support the pump casing 9 and the suction pipe 11 in their operative positions.

may be connected in any suitable manner to the long power shaft 13

Per D. The impeller or rotary pumping parts 10 $\wedge$ [are rigidly connected
to and supported by a vertical power shaft 13]* which extends down
through the pit casing 2 and which is driven from above by means
of a pulley 14. A small pipe 15 is supported as hereinafter described
surrounds power shaft 13 and is adapted to contain an oil bath
wherein said power shaft runs. The weight of the impeller and of
long novelly
" " the $\wedge$ power shaft are $\wedge$ supported and suspended at the surface of the
earth in a novelly constructed and novelly positioned fluid operated bearing 16, the details of which will be described below.

When the power shaft 13 is driven the pump impeller 10 will rotate and by means of the suction pipe 11 water will be drawn from the well casing 4 into the pump casing 9. On continued driving of shaft 13 the rotary impeller 10 will force this water

[* Words and figures enclosed in brackets erased in copy.]

up through the conduit 12 and discharge it through the discharge Y

Per D. 7. It will be understood that part of the weight or downward re-action of the water in conduit 12 is sustained on the impeller 10, and must be added to the weights of said impeller and power shaft 13 in considering the total weight supported above in bearing 16.

The details of this bearing will now be described.

The upper face of the discharge Y 7, Fig. 1, is formed with two offset seats 17 and 18 joined by the shoulder 19, and by means of bolts 20 the similarly but conversely formed face 21 of the casting 22 is securely attached to the discharge Y.

From the lower face of casting 22 depends a cylindrical portion 23 which loosely surrounds the power shaft 13 and forms about same the packing chamber 24 containing the packing 25. The usual packing gland 26 extends into the packing chamber 24 and is secured to and adjusted on casting 22 by means of bolts 27. The lower extremity of the depending cylindrical portion 23 is provided with threads 28 upon which is secured a similarly threaded coupling 29. The upper extremity of oil-containing pipe 15 is seen to be similarly threaded also, Fig. 1, and by screwing same into coupling 29 a complete and adequate support for said pipe is provided. The casting 22 terminates above in a flange 30, from the lower face of which depends another cylindrical portion 31 which embraces power shaft 13 so as to form another packing chamber 32 containing packing 33. The usual packing gland 34 extends into chamber 32 and is secured to and adjusted on cylindrical portion 31 by means of bolts 35. In order that the aforesaid packing glands and bolts may be accessible for inspection and adjustment two hand holes 36 are provided in opposite sides of the casting 22.

The flange 30 is thickened at one side so as to provide sufficient metal through which the horizontal fluid conduit 37 may pass.

At its outer extremity said conduit is provided with threads 38 and at its inner extremity said conduit joins the vertical conduit 39, the latter extending up through a cylindrical projection 40, Figs. 1 and 9, which rises from flange 30. The periphery of

the projection 40 is threaded as at 41 and a similarly threaded wear plate 42 is screwed upon same. A screw 43 locks wear plate 42 to projection 40 and an ordinary ring slot 44, Fig. 7, permits a packing ring 45 to be sprung around the periphery of wear plate 42.

Above projection 40 and wear plate 42, and spaced apart from same, is positioned a balancing plate 46 having a depending mach-

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ined rim 47 which co-operates with the packing ring 45, with wear plate 42, and with projection 40, to form the substantially fluid tight chamber 48.

The balancing plate 46 rotates with the power shaft 13 and is firmly and rigidly attached to same by means of keys 49 lying in key slots 50 and 51 in the power shaft and balancing plate respectively and fitting snugly between the slot shoulders 50′ and 50″ in the shaft. The keys 49 extend above the balancing plate so that they may be readily withdrawn from slots 51. With this construction it becomes necessary, however, to bind the upper portions of said keys tight into the slots 50 of shaft 13; and for this purpose I provide a split collar comprising two removable segments 52 and 53 best shown in Fig. 3. The segments of this split collar embrace the keys 49 and when in position serve to bind them tightly into the aforesaid slots. The periphery of the segments 52 and 53 is provided with screw-threads 54, Figs. 4 and 5, and a similarly threaded annular collar 55 is screwed onto segments 52 and 53 and serves to rigidly hold them in position. The set screw 56 is also provided and sets the collar 55 firmly onto segment 52. By this construction balancing plate 46 may be easily and rapidly disconnected from the power shaft 13, and is also rigidly connected with said shaft in such manner that all the weight carried by the shaft may be imparted to and sustained by the balancing plate 46.

It will be seen that the fluid tight chamber 48 is bounded above by the balancing plate 46 and is connected below through conduit 37, pipe 57, safety valve 58 and pipe 59 to the fluid pump 60. This pump is of any preferred construction and is shown to be driven by an electric motor 61. An oil-containing reservoir or sump 62 is located beneath safety valve 58 and a suction pipe 63 extends into the oil in said sump and is adapted to conduct same to the fluid pump 60.

When motor 61 drives pump 60, oil from the sump 62 will be forced under high pressure through pipe 59 into the fluid tight chamber 48 where its pressure will act upwardly on balancing plate

46. If the fluid pressure in said chamber is correctly chosen its upward effort on the balancing plate 46 will balance all the weight of shaft 13 and the parts supported by same. In this condition the power shaft is said to float, and its weight will be suspended from or supported on the upper surface of the fluid in chamber 48. As the shaft rotates in this floating condition the supporting friction of same will be slight and will include only the resistance between the supporting fluid surface and the balancing plate 46, and between the packing ring 45 and the ring slot 44. The shaft 13 often runs approximately at 1,000 revolutions per minute and supports a total weight of

Per C. 2,000 pounds or more; and I have found that under these conditions suspension from a fluid surface is essential if durability and efficiency are to be attained.

Per D. It might seem to be a preferred mode of operation to have the shaft [is preferred that the shaft be]* always suspended in a floating condition, but in practice several effects conspire and make constant floating difficult. The fluid pressure in chamber 48 is sometimes either superfluous or deficient, so that a summation of shaft forces, including the fluid pressure on the balancing plate, the shaft weight, the impeller weight and the water weight will leave a resultant upward or downward force of the shaft. Safety valve 58 is of ordinary conventional construction and tends to prevent any surplus fluid pressure on the balancing plate 46, the safety valve operating to release a portion of the fluid acting on the balancing plate and thereby eradicating the surplus pressure referred to. The fluid released by the safety valve will drop into the oil sump beneath, thereby preventing any waste of same. As a safeguard, however, against failure of the safety valve 58 I provide auxiliary bearing means adapted to sustain any resultant upward force of the shaft, said upward force being occasioned by surplus fluid pressure on the balancing plate 46.

This auxiliary bearing means is located directly above collar 55 and comprises the following parts: A circular ball race 64′ is cut in the upper surface of collar 55, and a series of hard steel anti-friction balls 65 are adopted to run in the same. Above said balls, and spaced apart from same, is another ball race 66 cut in a wear plate 67. Wear plate 67 is attached by screws

[* Words and figures enclosed in brackets erased in copy.]

68 to a neck 69 depending from a casting generally referred to as
70, the said casting being rigidly secured at its lower end to casting 22 by means of bolts 71.

By providing this auxiliary bearing means the objection to superfluous fluid pressure in chamber 48 is overcome, because the
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resultant upward shaft force will be adequately sustained by the anti-friction balls 65 and wear plate 67.

The upper face of flange 30 is formed with two offset seats 72 and 73 joined by the vertical shoulder 74, and the lower face of flange 75, of casting 70, is formed with both similar but conversely offset seats. The offset seats 17 and 18 on the discharge Y 7 and casting 22, and also the offset seats 72 and 73 of the castings 22 and 70, serve to maintain the discharge Y and the
castings 22 and 70 in perfect alinement, and additionally serve to provide fluid tight joint between said elements. Above flange 75 the casting 70 is built with a cylindrical portion 76 which forms a second chamber 77 surrounding and including both
the fluid tight chamber 48 and the auxiliary bearing means above
referred to.

Under normal operation fluid will slowly leak from the chamber 48 past the packing ring 45 into the chamber 77. There being
no escape for this fluid from the lower part of chamber 77 the same will gradually fill said chamber until the whole of the balancing plate and also the balls 65 of the auxiliary means will be immersed. An overflow pipe 78 taps chamber 77 above the auxiliary
bearing means and serves to conduct the fluid from chamber 77 back
to sump 62 when said fluid rises above the level of said overflow pipe. For purposes of clearness, however, the operating fluid has been omitted from chamber 77.

By choosing clean oil as the fluid for operating my bearing, no sand or grit will be injected between the active parts and a good wearing capacity will be thereby procured. Also there will be no rusting tendency of the bearing parts and the delays and danger introduced by rusted metal will be avoided. Also the whole
of the fluid bearing and the auxiliary bearing means being immersed in the oil, an efficient and adequate lubrication will always exist at every friction point. Also by providing overflow pipe 78 no oil is wasted and economy of operation is a prominent
feature in my installation.

As a safeguard against pressure deficiency of the fluid in chamber 48 I provide a second auxiliary bearing means located within the cylindrical portion 79 of casting 70. A web 80 extends across casting 70 between the cylindrical portions 76 and 79 and from said web rises a boss 80'. An enlarged aperture 81 is provided in said boss and permits power shaft 13 to pass through same, the said aperture being flared into an upper concave seat 82. Into aperture 81 and concave seat 82 fits an appropriately shaped casting 83 the same having a projecting drum 84 and a central aperture 85, the latter being adapted to loosely embrace power shaft 13. A circular disk casting 86 is formed with an inclined wheel race 88 extending in a circle completely around said casting. From the bottom of casting 86 depend two lugs 89 positioned so as to interfere with corresponding lugs 90 rising from web 80 of casting 86. The lugs 89 and 90 co-operate to arrest and prevent rotation of casting 86 and casting 83 around shaft 13. A cast annular frame 91 carries three inclined anti-friction wheels 92, Figs. 1 and 2, said anti-friction wheels being journaled to the frame by means of pins 93, and said wheels being adapted to run in the wheel race 88. The cast frame 91 is provided with an aperture 94 and within said aperture is positioned a casting 95 having a lower inclined face 96 adapted to rest and roll upon the inclined anti-friction wheels 92. The power shaft 13 is threaded above at 97, and a similarly threaded collar 98 is screwed rigidly onto the same. The pin 99 projects into the collar 98 and into the casting 95 and rotatively binds same, so that when collar 98 is screwed home, casting 95 and shaft 13 are bound to each other.

When there is a pressure deficiency on balancing plate 46 a resultant downward force exists on power shaft 13. This force is transmitted to casting 95 and from same is passed to and sustained on the auxiliary bearing means comprising anti-friction wheels 92 and cast ring 95. As shaft 13 and casting 95 rotate the wheels 92 will roll around the wheel race 88 and due to the relative radial distances of inclined face 96, and inclined wheel race 88 from the center of shaft 13, the cast frame 91 will rotate at a slow speed compared with that of the shaft 13 or casting 95. By this construction the friction necessary to support the rotating shaft is negligible, despite the resultant downward force of same.

At the upper extremity, shaft 13 is provided with a belt pulley 14 rigidly mounted on the shaft by any suitable means such as the square thread 100, and power is imparted to same by any ordinary belt as will be readily understood.

13

Insert D². D².>

In starting the well mechanism embracing this invention the pumping means 60 is brought into operation to raise the oil pressure in chamber 48 until the vertical weights or forces on shaft 13 are balanced and said shaft floats on the oil surface. Power is then imparted to pulley 14 and is transmitted by shaft 13 to the impeller 10 which effects the pumping and discharging of the water through discharge Y 7. If for any reason a surplus or deficient oil pressure exists on the balancing plate, the auxiliary bearing means located either within the cylindrical portion 76 or the cylindrical portion 79, of casting 70, will operate to sustain the resultant force of the shaft.

Insert B². B².>

If at any time the bearing is to be dismantled for repairs the bolts 71 and the pulley 14 are removed, so that the casting 70 may be raised off casting 22 to display the bearing elements beneath. The bearing being located at the surface of the earth is readily accessible for this purpose and together with the rapidity by which same may be dismantled, a substantial advance in the art is effected.

Furthermore, it is a well-known fact that the power-transmitting capacity of shafts under compression is less than the power-transmitting capacity of shafts under tension. By supporting or suspending the heavy power shaft and pumping impeller from above, and thereby operating said shaft under tension, my invention permits a more complete utilization of the power-transmitting capacity of shaft 13 than is possible in the constructions where the shaft and pumping impeller are supported from below. Also, with this arrangement all buckling and bending tendency of the shaft 13, along with its consequent vibratory and rattling tendency are obviated.

Per D.

Insert D³. D³.>

From the foregoing detailed description the construction and

mode of operation and co-operation of my novel bearing, pumping
20 means and other elements are thought to be clear.

14 I claim:—

Sub. A[a].

---

1. In combination, pumping means located beneath the surface of the earth; a power shaft driven from above and extending down to said pumping means, said shaft being adapted to transmit power to said pumping means; and a fluid operated bearing located above said pumping means for rotatively supporting said power driven shaft on a fluid surface.

2. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into said casing, said shaft being adapted to transmit power to said pumping means; and a fluid operated bearing located above said pumping means for rotatively supporting said power-driven shaft on a fluid surface.

3. In combination, a casing; pumping means located in said casing, said pumping means comprising a pump casing and a rotary pump impeller; a power shaft driven from above and extending down into said casing, said power shaft being rotatively connected below to said rotary impeller; and a fluid-operated bearing located above said pumping means and adapted to rotatively support said power shaft and said rotary impeller on a fluid surface.

4. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into the casing, said shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said pumping means; a substantially fluid tight chamber below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; and means for forcing a fluid under pressure into said substantially fluid tight chamber.

5. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into the casing, said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said pumping means; a substantially fluid tight chamber below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said substantially fluid tight chamber; and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft which thrust may be caused by a surplus fluid pressure on said balancing plate.

6. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into the casing, said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said

pumping means; a substantially fluid tight chamber below said balancing plate, said substantially fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said fluid tight chamber; and auxiliary bearing means for sustaining a resultant downward thrust of said power shaft, said downward thrust being occasioned by a deficiency in the fluid pressure on said balancing plate.

7. In combination, a casing; pumping means located near the bottom of said pit casing; a vertical power shaft driven from above and extending down into the casing, said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft adjacent its upper end; a substantially fluid tight chamber formed below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said substantially fluid tight chamber; auxiliary bearing means for sustaining a resultant upward thrust of said shaft, said upward thrust being caused by a surplus fluid pressure on said balancing plate; and second auxiliary bearing means for sustaining a resultant downward thrust of said shaft, said downward thrust being occasioned by a deficiency in the fluid pressure on said balancing plate.

8. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into the casing, said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said pumping means; a substantially fluid tight chamber below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said substantially fluid tight chamber; and means tending to prevent surplus fluid pressure on said balancing plate.

9. In combination, a casing; pumping means located in said casing; a power shaft driven from above and extending down into the casing, said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said pumping means; a substantially fluid tight chamber below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said substantially fluid tight chamber; means tending to prevent a surplus fluid pressure on said balancing plate, and auxiliary bearing means for sustaining a resultant upward thrust of said shaft, said upward thrust being occasioned by a surplus fluid pressure on said balancing plate.

10. In combination, a casing; pumping means in said casing; a power shaft driven from above and extending down into the casing; said power shaft being adapted to transmit power to said pumping means; a balancing plate located on said shaft above said pumping means; a substantially fluid tight chamber below said balancing plate, said fluid tight chamber being bounded above by said balancing plate; means for forcing a fluid under pressure into said substantially fluid tight chamber; means tending to prevent a surplus

18 Mail Room,
Jun- 9, 1913,
U. S. Patent Office.

Division 9,
Jun- 10, 1913,
U. S. Patent Office.

Paper No. 4.

In the United States Patent Office.

Div. 9, Room 142.

Paper No. 3.

A.

John A. Wintroath. Well Mechanism. Filed Dec. 2, 1912. Serial No. 734,649.

Los Angeles, Cal., May 14, 1913.

Commissioner of Patents.

Sir: In response to Office action of Apr. 3, 1913,—
Please amend this case as follows:—

Page 1, line 27, after "capacity," insert:
Insert C'. C'.>

A'. —According to the very principle of those fluid bearings which derive their fluid pressure from the main well pump itself, those bearings must necessarily submit to the above defects. Such a bearing must be located down reasonably close to the pump itself. If it were located anywhere near the top of the power shaft the liquid from the well pump would have practically no pressure head at the level of the bearing, and from a practical standpoint would therefore be incapable of producing an upward reaction sufficiently adequate to support or float a long suspended shaft and impeller. Such bearings must therefore be located at some point down on the shaft and access to them is consequently difficult. The higher up such bearings are placed the more cumbersome and large must be their construction, because they must support a definite weight and at higher levels have less fluid head with which to do it; while when such bearings are placed lower down and close to the well pump they become very inaccessible, and the rattling and buckling tendency of that portion of the shaft above the bearings becomes pronounced and detrimental. Putting such a bearing down close to the pump, however, sometimes makes it possible to use a reasonably small and convenient bearing.
A'. and in practice this position is therefore the most practical despite the difficulty of access.—

19 Page 2, cancel lines 1 to 5, inclusive, and substitute the following:—

A[2]. —My invention relates to a novel combination to be used in deep well pumping mechanisms.

Per B.

The centrifugal pumps in such deep wells may be located below the surface of the earth at any distance ranging from about 20 to 50 feet as an upper limit, and from about 300 or 400 feet and more as a lower limit.

[Matter enclosed between rules erased in copy.]

The invention includes a novelly-constructed fluid operated bearing novelly located at the top of the long power shaft which extends down to and operates the pump. The relatively high fluid pressure is supplied to this novelly-positioned bearing, from some source separate from the main well pump itself, and on this account it is possible to locate the bearing practically at the top of the shaft and immediately at or reasonably near to the surface of the earth. This position makes it perfectly accessible to repairs and makes it possible to suspend practically the whole length of the shaft. All rattling and buckling of the shaft is thereby eliminated and the installation runs smoothly and practically without vibration.—

Cancel all the claims and substitute the following:

Sub. C[6].

A[3]. —1. In deep well pumping mechanism, the combination of fluid pumping means located beneath the surface of the earth, a long power shaft driven from above and extending substantially down to said pumping means, said long shaft being adapted to transmit power to said pumping means, a fluid-operated bearing located substantially at the top of said long power shaft and adapted to rotatively support said shaft on a fluid surface, and a fluid pressure source separate from said fluid pumping means for maintaining a high fluid pressure in said fluid operated bearing near the top of the shaft.

[Matter enclosed between rules erased in copy.]

20 Per C.

A[3]. 2. In deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a pump-

ing impeller in said casing, a long power shaft driven from above and extending substantially down to said pumping impeller, said shaft being adapted to transmit power to said pump impeller, a fluid operated bearing located substantially at the top of said long power shaft, said bearing being adapted to rotatively support said long power shaft on a fluid surface, and a second power driven fluid pump for producing a high fluid pressure in said fluid-operated bearing near the top of the shaft.

3. In deep well pumping mechanism, the combination of a fluid pump located beneath the surface of the earth, said fluid pump comprising a pump casing and a pumping impeller in said casing, a long power shaft driven from above and extending substantially down to said pumping impeller, said shaft being adapted to transmit power to said pumping impeller, a fluid-operated bearing located substantially at the top of said long power shaft, said bearing being adapted to rotatively support said long power shaft on a fluid surface, and positively operated means separate from and in addition to said fluid pump, for producing relatively high fluid pressure in said fluid-operated bearing near the top of the shaft.

[Matter enclosed between rules erased in copy.]

Sub. B'.

A³. 4. In deep well pumping mechanism, the combination of a casing for a fluid pump, a rotary impeller in said casing, a long power shaft driven from above and extending down to said impeller, said power shaft being adapted to support and to transmit power to said impeller, a balancing plate located substantially at the top of said long shaft, a substantially fluid-tight chamber below said balancing plate, said substantially fluid-tight chamber being bounded above substantially by said balancing plate, means separate from and in addition to said fluid pump, for forcing fluid under pressure into said fluid-tight chamber so as to normally support said long power shaft and impeller on a fluid surface, and auxiliary bearing means for sustaining a resultant downward thrust of said power shaft, said downward thrust being occasioned by any deficiency in the fluid pressure on said balancing plate.—

[Matter enclosed between rules erased in copy.]

21 The references cited have been very carefully examined and the foregoing amendments and claims serve to particularly distinguish applicant's novelty over the same.

The Price construction is of the very type from which the ap-

plicant has broken away—see page 1, lines 13 to 27, together with the above amendment of applicant's specification.

Price's supporting piston G is operated by fluid pressure coming directly from the main well pump itself. As now pointed out in the applicant's specification this practically limits piston G to a position reasonably close to the pump itself. The well pumps usually run so as merely to deliver a good flow of water at the surface of the earth, and the pressure head of the water near the surface of the earth is practically negligible as compared with the pressure head at points closer to the pump. On this account, practical considerations would make it altogether impossible for Price's supporting piston G to be located *substantially at the top of the power shaft*. Furthermore, the piston G would have to be located at some point well down along the power shaft before the pressure head would become sufficiently great to make Price's construction practical. With relatively low pressure head the piston area would have to be so tremendous as to make the construction altogether useless and impractical. Concerning the kinds of fluid-supporting bearings, therefore, of which Price's construction may be considered a good example, the conclusion is obvious that the bearing must be down at some relatively inaccessible point, and that the shaft portions above the bearing tend to buckle radially and vibrate in the course of operation.

The applicant, by his invention, however, has broken away from the foregoing defects and has made it possible to locate the fluid-operated bearing substantially at the top of the power shaft where it is perfectly accessible for repair. This, together with the possibility of suspending the whole shaft and impeller on a fluid surface, makes it possible to sink the pump to depths considerably greater than what was heretofore practicable. His long suspended shaft is substantially free from all buckling, rattling and vibrating tendency, and this greatly prolongs the useful life of the lateral bearings which support the long shaft at various points along its length. In general, the applicant's invention makes it practicable to sink wells deeper, and at the same time it greatly increases the life of the operating parts, while the expense of repairs and substitution is remarkably decreased.

This advance was accomplished when the applicant deliberately provided a second source of fluid pressure separate from the main well pump, and thereby made it possible to locate his fluid-operated bearing substantially at the top of the long power shaft. By having a separate source of fluid pressure, the pressure may be deliberately controlled so as to perfectly balance the shaft weight and the pressure may be raised to a very great value, so that the bearing itself may be of small and gainly proportions. If water is used for creating a fluid pressure in the bearing, the water may, if necessary, be strained of all its sand, or else clean oil may be used for operating the bearing. These features of operation are incidental bene-
22 fits, added to the applicant's construction over and above the prominent fact that the bearing is accessibly located, and that the long pump shaft is suspended so as to be free of vibration.

The claims are now directed to the features of novelty just pointed out and the case is believed to be in condition for allowance.

Very respectfully,

JAMES R. TOWNSEND,
Att'y for Wintroath.

Application Room,
Jun- 26, 1913,
U. S. Patent Office.

Division 9,
Jun- 27, 1913,
U. S. Patent Office.

Paper No. 5.

In the United States Patent Office.

Division 9, Room 142.

John a Wintroath. Well Mechanism. Filed Dec. 2, 1912. Serial No. 734,649.

B.

Hon. Commissioner of Patents, Washington, D. C.

SIR: No action has yet been received responsive to applicant's amendment dated May 14, 1913. In view of the oral *interview with the Examiner, please add the following supplementary amendment. Re-write claim 4 as follows:*

B'. 2c [4].* In deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, positively operated means separate from and in addition to said pump for supplying fluid pressure to said fluid bearing and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

Insert C'. C'.>

*In applicant's paper number 3, page 2 lines 6 to 9 cancel "The centrifugal pumps * * * and more as a lower limit.*

23

Page 11, after line 29 of the original specification, please insert the following paragraph:

[*Words and figures enclosed in brackets erased in copy.]

B². The provision of the auxiliary bearing means for sustaining any resultant downward force of the shaft over and above the force counterbalanced by the fluid bearing, is very important in pump installations for the following reason: The installation is usually driven directly or indirectly either by an electrical motor, a gas engine or other source of motive power. The speed variations of the prime mover are minimized as much as possible considering the practical conditions of operation but there may, however, be some speed variations

Insert C³. ^ C³ [to which the shaft 13 is subject],* and

these variations are, of course, beyond the control of the operator. If the speed of the shaft goes up the rotary speed of the impeller would also go up and the velocity at which water is raised by the installation would increase. Dur-

Per C. ing this period of changing velocities the [actual weight or]* downward thrust of the long power shaft would also change due to the changing reaction of the long column of water on the impeller. These velocity changes and the corre-

, with certain types of impellers

" " sponding thrust changes may [sometimes]* become so considerable as to be serious, and are

aggravated

B². [avoided]* somewhat by the torsional coil and recoil of the long shaft. It being impossible

vary

Per C. from a practical standpoint to [regulate]* the

in accordance

" " pressure of the fluid bearing [so as to conform]* with the velocity changes and corresponding thrust changes of the shaft, it [it]* becomes

advantageous

" " [necessary]* to provide the supplementary bearing means for supporting the resultant downward thrust on the shaft. In this event, the fluid pressure on the fluid bearing may be set for the normal velocity and thrust of the shaft and when this velocity

fluid is not pressed out of the

Per C. and thrust increase the ^ fluid bear-

Insert C⁴. Per C. ing ^ [does not become destroyed.]*
C⁴

but the resultant downward thrust is taken up by the supplementary bearing in casing 79.

[* Words and figures enclosed in brackets erased in copy.]

From this the peculiar co-operation between my novelly located fluid bearing and supplementary bearing with a pump located far down along the power shaft may be clearly understood."

[Matter enclosed between rules erased in copy.]

As was carefully pointed out at the oral interview with the Examiner the following circumstances should also be further carefully considered in addition to the argument in applicant's paper No. 3. The applicant does not claim to be original in locating some sort of bearing at the top of a power shaft in pump installations because formerly bearings resembling applicant's supplementary bearing in casing 79 have been frequently located at the top of shafts for relatively shallow installations. This seems to have been the common practice for many years where the installation did not run into the relatively deep well class, but as the pumping depth became greater these roller bearing systems became more impracticable because of the rapidity with which they wore out under the heavy strain of the long shaft, the impeller and the reaction of the long column of water. When the pumping art, however, as practised with the rotary centrifugal pump, attempted to penetrate further and further into the earth it became necessary to invent some new form of bearing system to replace the old roller bearings at the top of the shallow installations. The art of record as illustrated by Price and other references which may be cited show how the hydraulic engineers solved the question of a more adequate bearing system for their relatively deep well pumps. As far back as 1894, the problem seems to have been solved by providing a fluid bearing which was operated by the main fluid pump itself. This was an obvious suggestion in view of the necessary existence of the main pump itself, as a source of hydraulic pressure for the bearing, and in view of this misleading suggestion the art has continued to hamper itself with fluid bearings which were necessarily located [far]* considerably below the top of the long shaft and reasonably close to the pump itself. The difficulties and shortcomings of this construction have been amply brought out in applicant's argument in Paper No. 3 to which reference should be had. To summarize the argument there presented, it should be very carefully noticed that the disadvantages of the Price combination arise from the inaccessibility of the hydraulic bearing both for repairs and for adjustment and also in the fact that the power shaft being supported from some point relatively deep in the well and usually at the main pump itself would

[*Words and figures enclosed in brackets erased in copy.]

buckle like a column from the bearing upward. This buck-
25 ling action becomes more and more serious as the depth of the well increases and the rotary speed being high the bearings located at intervals within applicant's tube 15 naturally became worn very fast. In view of these considerations it must be obvious that the Price combination is replete with inherent embarrassing difficulties under which the pumping art has been suffering for a long period. In considering this very great weight should be given to the fact that all these difficulties have been tolerated despite the fact that fluid operated bearings operated by separate pumps were contemporaneously known in several arts. Applicant makes no claim in this present application for having invented any broad combination of a fluid operated bearing and a separate source of a fluid pressure because such a combination was at hand for many years and might be said to have always been a suggestion as to how to modify the Price combination so as to avoid its embarrassing and inherent features. The fact remains, however, that despite this supposed suggestion, the pumping art has continued along the lines of the Price combination and the length of time through which they have endured its difficulties should be a clear indication of the remoteness of the several portions of the prior art which may now seem to have been suggestions prompting the applicant's novel and improved combination.

It is submitted that [the fact that]* after the applicant has made the changes in the Price construction and has carefully pointed out its advantages and the extent to which the art has been thereby advanced, it might not be difficult to see how prior devices *might* have suggested the improvement if some one had been sufficiently alert to note their suggestion. If, however, these prior devices *really* constitute any suggestion at all, the length of time through which they were ignored should be clear evidence of the dimness and uncertainty of their suggestiveness.

The applicant has not merely substituted an old form of separately operated hydraulic bearing for the old roller bearing or thrust bearing at the top of pump shafts of relatively shallow pump installations. Such pump installations having been practically limited to relatively shallow depths would not have been the class of installations in which the applicant's avoidance of the buckling could have been shown or displayed. This is probably because the buckling feature does not become of practical importance until the invention is carried over into the relatively deep well class. In this latter class, we first step into the field where the shafts are so long that if supported from below the buckling feature would be very noticeable and disastrous. In this field the Price combination came into its real utility and caused the bearing system to become located down in the well so that the buckling which was possible and probable was given an opportunity to exert its ill effects. In considering applicant's invention attention must, therefore, be fixed on this latter class of deep well in-

[* Words and figures enclosed in brackets erased in copy.]

stallations and on the shaft buckling which existed there. It was in this class of machinery that the applicant made his change, as pointed out in applicant's Paper No. 3, and secured the many advan-
26 tages and improvements in the pumping art as therein recited.

This was primarily a change in the Price combination, therefore, and not in the relatively shallow well installations with the upper roller supports because in the latter the shaft length was not sufficient to suggest the fact that [it]* great advantage was obtained by the suspension feature.

This argument is made for the purpose of clarifying the issue and expediting the prosecution of the case. It is believed that in view of the careful analysis the Examiner will appreciate the position of applicant's invention within the prior art above admitted and that the Examiner will see clearly the advantage which the applicant's invention has made in the pumping art itself.

In conclusion, it should be very particularly noted that the applicant has emancipated this art from the difficulties engrafted on it by following the natural suggestions of the case as represented by Price, etc. In view of the applicant's invention it would now seem that the pumps may be projected to an unlimited depth without fearing trouble and embarrassment from the difficulties which were inherent in the earlier combinations.

All the argument above made, of course, applies to all the claims but in addition to said argument, the matter which has now been specifically incorporated into the specification constitutes further argument for the patentability of claim 4. Of this claim it seems there will be no question whatsoever as to its patentability in the absence of references specifically disclosing the combination claimed.

The case is believed to be in condition for allowance and a favorable action is requested.

Very respectfully,

ROBERT A. STEPS,
Attorney for Wintroath.

June 26, 1913.

P. S.—In considering the foregoing analysis it will, of course, be understood that in practice the distinction between the so-called relatively shallow pump class and the relatively deep pump class is not a very sharp one but as is usual in such cases the classes overlap and the structures which are best adapted for either class also overlap into the other class.

ROBERT A. STEPS,
Att'y for Wintroath.

[* Words and figures enclosed in brackets erased in copy.]

27 Paper No. 6.

August 1, 1913.

Robert A. Steps, Mail Desk, Patent Office, Washington, D. C.:

John A. Wintroath. For Well Mechanism. Filed Dec. 2, 1912. Ser. No. 734,649.

This application has been considered as amended June 9, and June 26, 1913.

Claims 1, 2, and 3 are rejected on the ground that they state a very obvious use of the fluid bearing of Holmes, #775,923, Nov. 29, 1904, Class 64-47, in Ames & Fulton, #695,871, Mar. 18, 1902, Pumps, Rotary Single Piston (Cent.), the thrust bearing of the latter being replaced by the fluid bearing of Holmes. In such substitution the functions performed by the bearing of Holmes are those for which it is intended.

Claim 4 is deemed allowable.

F. M. TRYON, *Ex.*

E. L. WALLACE.

Application Room,
Aug. 12, 1913,
U. S. Patent Office.

Division 9,
Aug. 12, 1913,
U. S. Patent Office.

Paper No. 7.

In the United States Patent Office.

Division 9, Room 142.

In re Application of John A. Wintroath. Well Mechanism. Filed Dec. 2, 1912. Serial No. 734,649.

C.

Aug. 9th, 1913.

Hon. Commissioner of Patents, Washington, D. C.

SIR: In response to the Office action of August 1, 1913, please amend as follows:

√*Page 1 of the original specification, line 14, insert:—"partly"—before "supported".*

√*Same page, line 27, after "capacity" and before the insert already made here by applicant's paper 3, insert:—*

C'. A far more serious objection to this bending and buckling, however, is the fact that the rapidly rotating shaft then quickly wears out the series of bearings which give lateral support along its length.

28 √*Page 2, line 14, change "at" to: —near—.*
√*Page 4, line 12, cancel the period after "10" and insert:—,*

C². both of which are conventionally shown and represent casings and impellers of any variety whatsoever.

In the addition made to page 11, line 29 of the original specification and presented on pages 1 and 2 of applicant's amendment of June 26, 1913, please make the following changs:—
√*Page 2 of said amendment of June 26, and line 4 thereof, change "to which the shaft 13 is subject" to:*

C³. —due to voltage changes when the electric motor is used or to changes in the quality of the gas when a gas engine is used,—

√*Same page, line 9, cancel "actual weight or".*
√*Same page, line 13, change "sometimes" to:*—, with certain types of impellers—.
√*Same page, line 16, "regulate" to: —vary—.*
√*Same page, line 17, change "so as to conform" to:* —in accordance—.
√*Same page, line 18, change "necessary" to: —advantageous—.*
Same page, line 23, before "fluid" insert —fluid is not pressed out of the—.
√*Same line, after "bearing" insert:*

C⁴. —so as to permit the metallic parts of the latter to wear upon and destroy themselves—.

√*Same page, lines 23 and 24, cancel "does not become destroyed".*
√*Same page, lines 25 to 28, cancel "From this, the peculiar * * * may be clearly understood." and substitute:—*

C⁵. The above described reaction of the water column is most noticeable with impellers which work partly on a screw principle so as to directly push the water upward. It should also be noticed however that various other distributions of the total shaft thrust between the fluid operated bearing and the supplemental bearing can readily be made. For instance, the pressure in the fluid bearing may be kept at a slightly lower value than that supposed above so that the shaft is always supported somewhat by the supplementary bearing. In this event the shaft will certainly not have any upward or downward movement whatsoever regardless of slight variations of the pressure in the fluid bearing but the exact vertical position of the shaft will be determined by the bearing surfaces in the supplementary bearing. In this sense the fluid operated

bearing might be spoken of as a fluid balance serving to balance the greater part of the shaft weight and leaving only so small a portion of the weight as may be readily carried by a supplementary bearing, this latter portion of the weight also serving to hold the shaft steady despite pressure fluctuations in the fluid bearing. Though the supplementary bearing may be located at any preferred or desired point it is a further advantage to have it also located near the top of the shaft and in reasonably close proximity to the fluid operated bearing. In this event the long and heavy power shaft depends from both bearings and by its own weight tends to draw itself into a substantially straight vertical line. Such location of the bearing means not only makes the same very accessible for repair and adjustment but also improves the performance of the shaft materially.—

29

C5.

√ *In the original specification, page 7, line 30, after "2,000" add:*
—pounds or—.
√ *Cancel claims 2 and 3 and re-write claim 1 as follows:*

C6. 1. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft having such length that the shaft would buckle seriously if supported from below, said shaft being driven from above and being adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said long shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, and positively operated means separate from and in addition to said pump means for supplying fluid pressure for said fluid bearing.

√ Renumber the allowable claim 4 as 2, and add the *following claim:*—

C7. 3. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into a substantially straight vertical line, and positively operated means

separate from and in addition to said pump means for supplying fluid pressure for said fluid operated bearing.

Insert D¹. D¹.>

30 *Remarks.*

The references last cited and the remarks of the Examiner have been very carefully reviewed. It should be noticed, however, that the isolated structures shown in the two patents to Holmes and Ames of record merely disclose a state of the prior art which was admitted by the applicant's amendment dated June 26, 1913.

The present claims 1 and 3 have been re-written, however, so as to more clearly point out the applicant's invention, and in support of said claims the Examiner is requested to give very careful consideration to the arguments already pointed out in applicant's last amendment.

In view of the arguments just referred to, and in view of the careful wording of the present claims, it is hardly believed that the Examiner will adhere to his contentions. On the question of the obviousness of a substitution as suggested in the Office action, the state of the prior art at least raises a very strong presumption against the position taken by the Examiner. The previous argument by applicant is rather full on this point, but notwithstanding the following statements seem appropriate.

Even Ames was not the first inventor to suspend a pump shaft from above for, in *relatively shallow wells* this seems always to have been the custom. When the depth of the well, however, became greater so that the weight of the shaft became too heavy for a bearing such as shown even by Ames, the hydraulic engineers followed the *obvious* suggestion of Holmes and others and associated a fluid operated bearing with pump mechanism such as shown in Ames. In truth, *this* was an *obvious* step because fluid bearings have been especially devised for use in those very cases where thrusts became too great for ordinary thrust bearings or even for roller bearings, as in Ames. At this point in the argument, it should be noticed, however, that the most conclusive test as to what was really *obvious* should be controlled by the history of the art itself, and the patent to Price of record aptly illustrates this subsequent history. For various reasons, Price and others used fluid operated bearings, but preferred to operate them by pressure sources derived from the main pump [bearing]* itself and, therefore, were compelled to locate their fluid bearing at some point down near the pump. Some advantages are perhaps attained by this arrangement but so far as the record shows, these inventors were altogether *unconscious* of the serious disadvantages and damaging features which such an arrangement included, and which were brought into the case *just* because the shaft length was gradually changing from the relatively short length for which the Ames construction was satisfactory to the relatively longer

[*Words and figures enclosed in brackets erased in copy.]

lengths for which a fluid operated bearing was practically essential. These difficulties consist generally, of the fact that in Price and others, the fluid bearing partly supported the shaft from a relatively low point so that the shaft above this point tended to bend
31 or buckle, and it must be remembered that in these heavy shafts, frequently rotating at very high speeds, the bending and buckling obviously weaken the shaft very much and also rapidly wear out the series of bearings which laterally support the shaft along its length. Furthermore, these disadvantages and difficulties would not have been serious if the shaft length had been short and it should be easily conceivable that the attention and painstaking analysis of the *inventor* were necessary to observe that these disadvantages gradually accrued as the shaft length increased from the shorter lengths to the longer lengths where fluid operated bearings are imperative. To one who is unconscious of these matters, the obvious association of a fluid bearing with pumping mechanism would have been as in Price of record, instead of at the top in substitution of the Ames bearing, and this is conclusively emphasized by the history of the art itself.

Now that the applicant has pointed out these disadvantages it may indeed seem *obvious* that they could always have been avoided and that well pumping mechanism should have been made perfect at the start by associating the fluid bearings with relatively deep well mechanism in the manner disclosed by the applicant, but the history of invention includes a long series of valuable *patented* improvements which after being disclosed by their author were so easy to understand that one is perplexed and astonished that the improvement was not available from the start.

The Examiner states that in substitutions such as he suggests "the functions performed by the bearing of Holmes are those for which it is intended". As showing that this is probably not correct, however, it should be noted that Holmes' bearing *contains no suggestion, of supporting a long, heavy, rapidly-rotating shaft substantially at the top so that the shaft depends from the bearing and by its own weight tends to draw itself up into a substantially straight vertical line.* In other words, the Holmes' bearing is not specially *intended* to suspend a long shaft in such manner as will give it the greatest strength and which will prolong the life of the bearings which give lateral support to it. It was for these very reasons, however, and to secure these beneficial results that the applicant located his fluid operated bearings in the top of the shaft instead of at some lower point as in Price; and the claims now embracing all the features whereby these notable improvements in the performance of deep well mechanism are obtained and being drawn specifically to the applicant's novel arrangement, should be allowed.

In view of the benefits which the applicant's invention confers upon the art, first, by making the bearing of Price accessible for repairs and adjustments; second, by materially improving the performance of the long, heavy, rapidly rotating power shaft of relatively deep well pumping mechanism, and third by making it possible now to sink wells apparently to unlimited depths, it is hoped that the Ex-

aminer will not longer delay the reward of legal protection which the Patent Statutes contemplate in such cases.

32 The case is now thought to be in condition for allowance and favorable action is requested.

Very respectfully,

ROBERT A. STEPS,
Attorney for Wintroath.

August 9, 1913.

Application Room,
Aug. 12, 1913,
U. S. Patent Office.

Division 9,
Aug. 12, 1913,
U. S. Patent Office.

Paper No. 8.

In the United States Patent Office.

Division 9, Room 142.

In re Application of John A. Wintroath. Well Mechanism. Filed December 2, 1912. Serial Number 734,649.

D.

Aug. 12th, 1913.

Hon. Commissioner of Patents, Washington, D. C.

SIR: Please add the following supplementary amendment to applicant's amendment of August 9, 1913.

Page 2, line 19, of the original specification after "obviated" insert:

D'. —Also the relatively long and usually rapidly rotating power shafts embraced in this invention will not abuse the bearings which may give it lateral support along its length, because this invention contemplates particularly that the shaft shall practically depend from the fluid bearing located near its upper extremity [and]* so that the weight of the shaft draws it into a substantially straight vertical line instead of permitting it to buckle onto its bearings as when partly supported from below.

√*Page 4, lines 21 and 22, change "are rigidly connected* * * * *power shaft 13" to:*—may be connected in any suitable manner to the long power shaft 13[.]*"

√*Same page, line 27, insert "long" before "power" and insert* √ √
"novelly" before "supported".

Page 5, line 6, insert:—"part of" [the]" after "that".* √ *Page*

[*Words and figures enclosed in brackets erased in copy.]

8, line 3, change "is preferred that the shaft be" to:—might seem to be a preferred mode of operation to have √the shaft—.

√*Page 11, line 18, after "understood" insert the following—*

D². 33 All of the above described construction discloses in detail one form of mechanism whereby the benefits of this invention may be secured. It will be understood, though, that many of these details may be varied very extensively without departing from the spirit of this invention as claimed below. Thus, this invention is not avoided by using any other suitable form[s]* of fluid operated bearing whatever, so long as it is located substantially at the top of the relatively long power shaft so that the shaft practically depends
D². from the bearing and by its own weight tends to draw itself into a substantially straight vertical line. Though it is preferable also to use auxiliary or supplementary bearing means for the purpose of supporting any upward or downward thrusts on the power shaft, nevertheless an operative structure is produced without any of these supplementary bearing means, and this structure is also included in this present invention. This being so, it is, of course, understood that the auxiliary bearings may take any form whatsoever without regard to the above described details which show only one form of the invention.

√*Page 12, line 17, in case the words "with" after "along" and* √ *"and rattling" after "vibratory" are not found in the Office file, please insert these words in these respective places.*

√*Page* 12 ∧ [*12*]* *immediately after line 17, insert the following:*—

D⁸. Attention will now be called to another feature of the invention. As has been above described, the auxiliary bearing in casing 79 includes the boss 80′ having the concave seat 82, for supporting the appropriately-shaped bearing casting 83, while by reference to Figs. 1 and 7, it will be seen that the fluid operated bearing has a certain amount of play and clearance both between the depending rim 47 and plate 42, and between the balancing plate 46 and plate 42. Before stating the several purposes of this construction, it may be noticed, however, that in practice the actual play between the depending rim 47 and the plate 42 is not so great as has been illustrated in Figs. 1 and 7 and, in fact, is usually so small that it would be impossible for the Figures to show it if it were drawn in correct relative proportion to the remainder of the mechanism. In practice, this play need only be as great as would be encountered in a very loose bearing fit, but

[*Words and figures enclosed in brackets erased in copy.]

for the purpose of bringing it out, this has been considerably exaggerated in Figures 1 and 7.

These features in the auxiliary bearing and in the fluid operated bearing are introduced so that the bearings may
34 accommodate themselves to the shaft as the axis of the
D[3]. latter may from time to time tend to swing or shift around in the bearings with a pendulum action. It is quite essential to the perfect performance of a bearing system at the top of long pump shafts that such swinging reactions should be allowed for, because the shaft 13 penetrating deep into the earth may have its lower end pushed around considerably by the *un-* uniform sliding or settling of the various layers of earth through which the shaft passes. On this account, the sand approximately in the region of the pump may shift the latter,—and, therefore, the lower extremity of the shaft—somewhat to the side. The shaft being rigidly connected to the balancing plate in the fluid operated bearing, will, therefore, carry this bearing plate over sideways and unless the above referred to play were allowed in the fluid operated bearing the latter would force its parts together unusually hard so as to wear them fast, while the fluid operated bearing would also hold the upper extremity of the shaft in a flexed and strained position with reference to the lower parts of the shaft. By the play shown in Fig. 7, however, all this is avoided so that the fluid operated bearing may readily accommodate itself to the shifts which are incident to the axes of all pump shafts. This problem has been previously solved for roller bearings such as shown in the applicant's casing 70 when such roller bearings were used alone, and the appropriately-shaped casting 83 riding in the concave seat 82 has always
D[3] been understood by practical well men to be for the purpose of allowing the roller bearing to accommodate itself to such swinging of the pump shaft, so that this feature need, therefore, not be further described, with reference to the roller bearing.

Please add the following claims:

D[4]. 4. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, positively operated means separate from and in addition to said pump means for supplying fluid pressure to said fluid bearing, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and aux-

iliary bearing means for sustaining any resultant upward thrust of said power shaft.

5. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft and said fluid operated bearing having play so that the fluid bearing may accom-odate itself to shifting of the shaft axle, and positively operated means separate from and in addition to said pump means for supplying fluid pressure for said fluid bearing.

Remarks.

This case now seems to be in condition for allowance and favorable action is requested.

Very respectfully,

ROBERT A. STEPS,
Attorney for Applicant.

August 12, 1913.

Paper No. 10.

Mar. 21, 1916.

Jas. R. Townsend, San Fernando Bldg., Los Angeles, Cal.:

Patent to John A. Wintroath for "Well Mechanism. Nov. 25, 1913. No. 1,079,679. Application Filed Dec 2, 1912. Ser. No. 734,649.

39,684.

1. In a deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

2. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing

and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into a substantially straight vertical line, and means for supplying fluid under pressure to
36 said fluid bearing independently of the action of the pump means.

3. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

The interference involves your patent above identified and an application for "Deep Well Pumps", filed by Matthew T. & Mark C. Chapman, whose post office addresses are Care, The American Well Works, Aurora, Ill. whose attorneys are Adams & Jackson, of Monadnock Block, Chicago, Ill., and whose assignee is The American Well Works, of Aurora, Ill.

The relation of the counts of the interference to the claims of the respective parties is as follows.

Counts.	Chapman & Chapman.	Wintroath.
1	1	2
2	2	3
3	3	4

P. D. HASKELL,
Acting Ex'r.

F. W. B.

(Here follow diagrams and specification marked pp. 37 to 46 inclusive.)

37

J. A. WINTROATH.

WELL MECHANISM.

APPLICATION FILED DEC. 2, 1912.

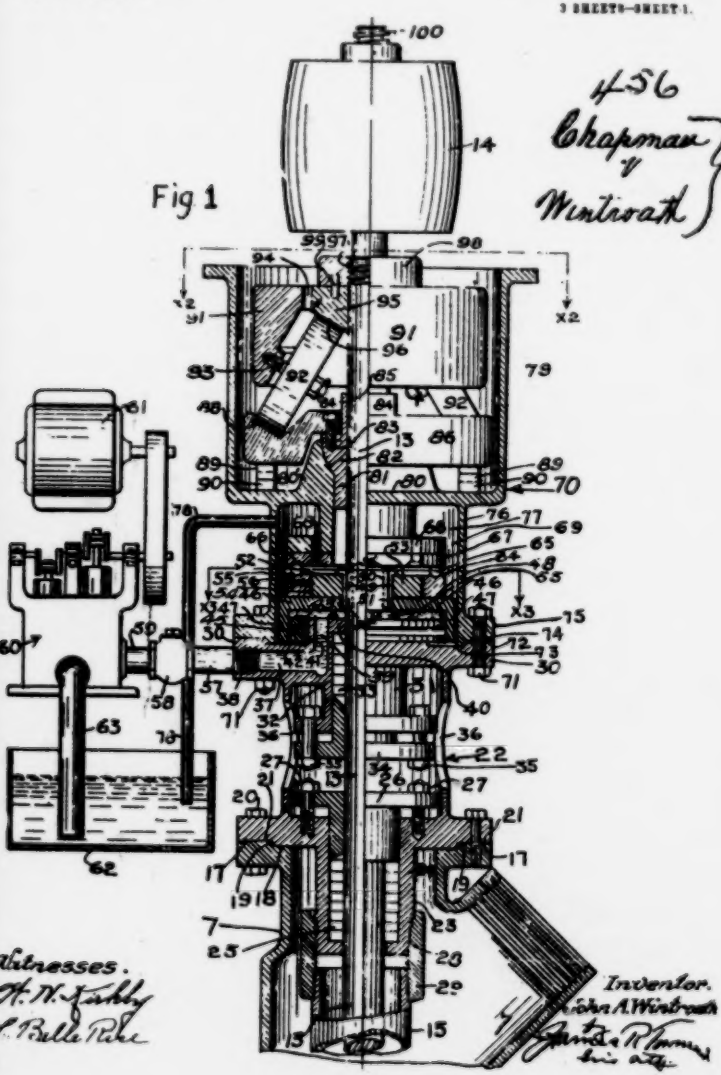
1,079,679.

Patented Nov. 25, 1913.

3 SHEETS—SHEET 1.

456 Chapman v Wintroath p37

Fig 1



Witnesses.
H. W. Ashby
L. Belle Pike

Inventor.
John A. Wintroath
by James R. Thomas
his Atty.

38

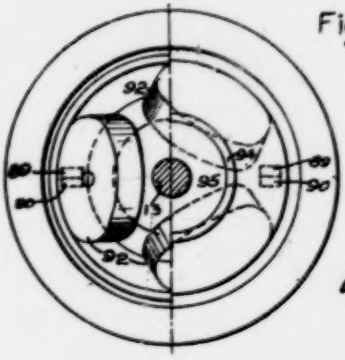
J. A. WINTROATH.
WELL MECHANISM.
APPLICATION FILED DEC. 9, 1913.

1,079,679.

Patented Nov. 25, 1913.

2 SHEETS—SHEET 2.

Fig. 2



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Chapman
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Wintroath
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Fig. 3

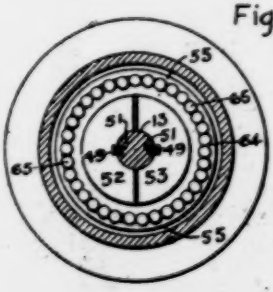

Fig. 4

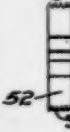

Fig. 5

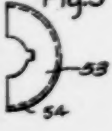

Fig. 6

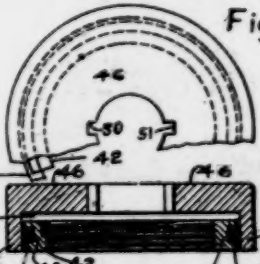

Fig. 7

Witnesses
H. N. Ashby
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his atty

39

J. A. WINTROATH.

WELL MECHANISM.

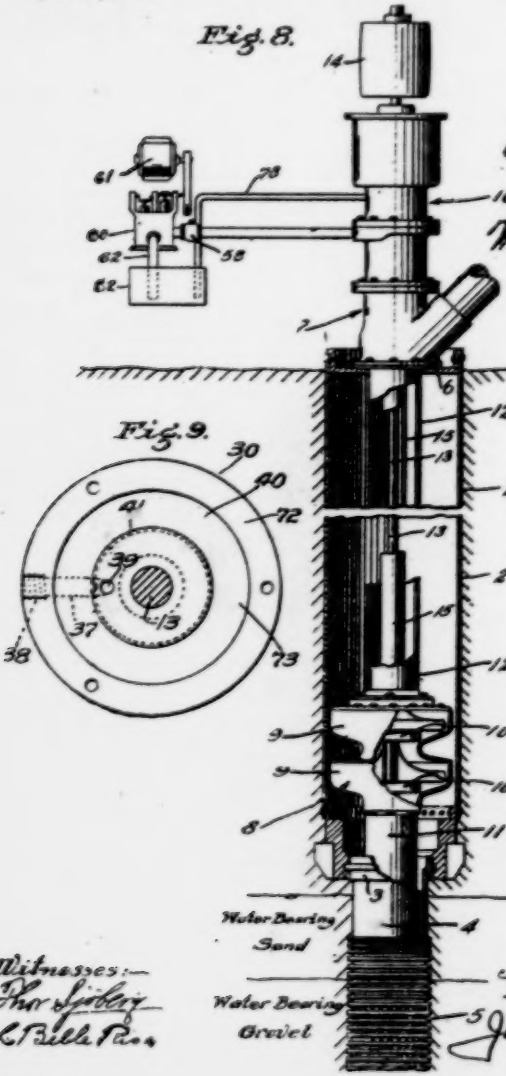
APPLICATION FILED DEC. 8, 1913.

1,079,679

Patented Nov. 25, 1913.

3 SHEETS—SHEET 3.

Fig. 8.



456 Chapman vs. Wintroath } p. 39.

Fig. 9.

Witnesses:—
Thos. Sperry
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5 Ex J

UNITED STATES PATENT OFFICE.

JOHN A. WINTROATH, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO LAYNE & BOWLER CORPORATION, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

WELL MECHANISM.

1,079,679. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed December 2, 1912. Serial No. 734,649.

To all whom it may concern:

Be it known that I, JOHN A. WINTROATH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Well Mechanism, of which the following is a specification.

In pumping wells used for withdrawing water or other liquids from the earth a casing is sunk, often several hundred feet into the earth, and at the bottom of said casing a rotary pumping means is installed for raising the water or other liquid to the surface. A long power shaft, driven from above, extends down through the casing and transmits power to the rotary pumping means below. The means for supporting said rotary pump and the long power shaft involves considerable inconvenience. In some pumping systems the rotary pumping parts and power shaft are partly supported from below by means of a delicate hydraulic bearing located at the bottom of the casing, and said hydraulic bearing is operated by the same water pumped through the well. This construction, however, is subject to the following inherent defects: The bearing, being operated by well water, which obviously carries some sand and grit from its origin, soon rusts and wears, and its operation becomes quite unsatisfactory. Also said delicate hydraulic bearing, being located at the bottom of the well casing, is practically inaccessible; and due to the frequent repairs required on same, its up-keep involves considerable annual expense. Also the long heavy power-transmitting shaft tends to bend or buckle when supported from below, and this tendency materially impairs its power-transmitting capacity. A far more serious objection to this bending and buckling, however, is the fact that the rapidly rotating shaft then quickly wears out the series of bearings which give lateral support along its length.

According to the very principle of those fluid bearings which derive their fluid pressure from the main well pump itself, those bearings must necessarily submit to the above defects. Such a bearing must be located down reasonably close to the pump itself. If it were located anywhere near the top of the power shaft the liquid from the well pump would have practically no pressure head at the level of the bearing, and from a practical standpoint would therefore be incapable of producing an upward reaction sufficiently adequate to support or float a long suspended shaft and impeller. Such bearings must therefore be located at some point down on the shaft and access to them is consequently difficult. The higher up such bearings are placed the more cumbersome and large must be their construction, because they must support a definite weight and at higher levels have less fluid head with which to do it; while when such bearings are placed lower down and close to the well pump they become very inaccessible, and the rattling and buckling tendency of that portion of the shaft above the bearings becomes pronounced and detrimental. Putting such a bearing down close to the pump, however, sometimes makes it possible to use a reasonably small and convenient bearing, and in practice this position is therefore the most practical despite the difficulty of access.

The invention includes a novelly-constructed fluid operated bearing novelly located at the top of the long power shaft which extends down to and operates the pump. The relatively high fluid pressure is supplied to this novelly-positioned bearing, from some source separate from the main well pump itself, and on this account it is possible to locate the bearing practically at the top of the shaft and immediately at or reasonably near to the surface of the earth. This position makes it perfectly accessible to repairs and makes it possible to suspend practically the whole length of the shaft. All rattling and buckling of the shaft is thereby eliminated and the installation runs smoothly and practically without vibration.

An object of the bearing means embraced in my invention is to reduce the friction created by supporting the rotary pumping parts and the vertical power shaft. To this end I provide the novel fluid operated bearing hereinafter described.

Another object is to provide durable and efficient bearing means for supporting the vertical power shaft and the rotary pumping parts, which bearing shall be easily and conveniently accessible at the surface of the earth. To this end I provide above the pit casing, and near the upper extremity

of the power transmitting shaft, a novelly constructed bearing which may be readily dismantled for inspection and repairs. As will be hereinafter described the vertical power shaft and the rotary pumping means are suspended from the bearing, and the buckling and weakening tendency of said power shaft is thereby obviated. Also the relatively long and usually rapidly rotating power shafts embraced in this invention will not abuse the bearings which may give it lateral support along its length, because this invention contemplates particularly that the shaft shall practically depend from the fluid bearing located near its upper extremity so that the weight of the shaft draws it into a substantially straight vertical line instead of permitting it to buckle onto its bearings as when partly supported from below.

Another object is to avoid excessive wearing and rusting of the bearing parts and at the same time to efficiently lubricate the same. To this end I use lubricating oil under pressure for operating the novel fluid bearing hereinafter described.

Other objects may appear from the following detail description taken in connection with the drawings.

The following drawings illustrate my invention.

Figure 1 is an elevation partly in axial section through the bearing embraced in my invention and shows the same attached to the upper end of the pit casing. The axial section is taken through the whole bearing casing, but only through the left half of the bearing core while the right half of said bearing core is shown in full. Fig. 2 is a plan section taken on line x^2—x^2, Fig. 1. The left half of the roller casing has been removed in order to expose the position of the roller beneath. Fig. 3 is a plan section on line x^3—x^3, Fig. 1. Fig. 4 is an end view of one segment of a split collar used in my bearing. Fig. 5 is a plan view of the split collar shown in Fig. 4. Fig. 6 is a fragmental plan view of a balancing plate, wear plate, and packing ring used in my bearing. Fig. 7 is an axial section of the same parts shown in Fig. 6. Fig. 8 is a fragmental view illustrating the well mechanism in place and broadly shows the novel combination of parts embracing my invention. Fig. 9 is a plan view of one of the bearing castings.

Into the earth 1 is sunk a cylindrical drum 2 shown in Fig. 8 and termed a pit casing. At the lower extremity of pit casing 2 the coupling member 3 connects said pit casing to a well casing 4, said well casing having a lower screened and perforated portion 5; and at the upper extremity of said pit casing the flange plate 6 connects said pit casing to a discharge Y 7. The well casing 4 projects down into the water bearing sands and gravels and is adapted to form a well reservoir from which the rotary pumping means 8, located in pit casing 2, and usually near the bottom thereof, may draw its water supply.

The pumping means 8 comprises a stationary pumping casing 9 and a rotary impeller 10, both of which are conventionally shown and represent casings and impellers of any variety whatsoever. At its lower end the pump casing 9 is connected with a suction pipe 11 extending into the well casing 4 and being adapted to conduct water up to the pump casing; and at its upper end said pump casing is connected to a water conduit 12, the latter serving to conduct the pumped water up to the discharge Y 7. This water conduit 12 is rigidly connected to the discharge Y above, and in an obvious manner serves to support the pump casing 9 and the suction pipe 11 in their operative positions. The impeller or rotary pumping parts 10 may be connected in any suitable manner to the long power shaft 13 which extends down through the pit casing 2 and which is driven from above by means of a pulley 14. A small pipe 15 supported as hereinafter described surrounds power shaft 13, and is adapted to contain an oil bath wherein said power shaft runs. The weight of the impeller and of the long power shaft are novelly supported and suspended at the surface of the earth in a novelly constructed and novelly positioned fluid operated bearing 16, the details of which will be described below. When the power shaft 13 is driven the pump impeller 10 will rotate and by means of the suction pipe 11 water will be drawn from the well casing 4 into the pump casing 9. On continued driving of shaft 13 the rotary impeller 10 will force this water up through the conduit 12 and discharge it through the discharge Y 7. It will be understood that part of the weight or downward re-action of the water in conduit 12 is sustained on the impeller 10, and must be added to the weights of said impeller and power shaft 13 in considering the total weight supported above in bearing 16. The details of this bearing will now be described.

The upper face of the discharge Y 7, Fig. 1, is formed with two offset seats 17 and 18 joined by the shoulder 19, and by means of bolts 20 the similarly but conversely formed face 21 of the casting 22 is securely attached to the discharge Y. From the lower face of casting 22 depends a cylindrical portion 23 which loosely surrounds the power shaft 13 and forms about same the packing chamber 24 containing the packing 25. The usual packing gland 26 extends into the packing chamber 24 and is secured to and adjusted on casting 22 by means of bolts 27. The lower extremity of the depending cylindrical portion 23 is provided with threads

28 upon which is secured a similarly threaded coupling 29. The upper extremity of oil-containing pipe 15 is seen to be similarly threaded also, Fig. 1, and by screwing same into coupling 29 a complete and adequate support for said pipe is provided. The casting 22 terminates above in a flange 30, from the lower face of which depends another cylindrical portion 31 which embraces power shaft 13 so as to form another packing chamber 32 containing packing 33. The usual packing gland 34 extends into chamber 32 and is secured to and adjusted on cylindrical portion 31 by means of bolts 35. In order that the aforesaid packing glands and bolts may be accessible for inspection and adjustment two hand holes 36 are provided in opposite sides of the casting 22. The flange 30 is thickened at one side so as to provide sufficient metal through which the horizontal fluid conduit 37 may pass. At its outer extremity said conduit is provided with threads 38 and at its inner extremity said conduit joins the vertical conduit 39, the latter extending up through a cylindrical projection 40, Figs. 1 and 9, which rises from flange 30. The periphery of the projection 40 is threaded as at 41 and a similarly threaded wear plate 42 is screwed upon same. A screw 43 locks wear plate 42 to projection 40 and an ordinary ring slot 44, Fig. 7, permits a packing ring 45 to be sprung around the periphery of wear plate 42.

Above projection 40 and wear plate 42, and spaced apart from same, is positioned a balancing plate 46 having a depending machined rim 47 which coöperates with the packing ring 45, with wear plate 42, and with projection 40, to form the substantially fluid tight chamber 48. The balancing plate 46 rotates with the power shaft 13 and is firmly and rigidly attached to same by means of keys 49 lying in key slots 50 and 51 in the power shaft and balancing plate respectively and fitting snugly between the slot shoulders 50′ and 50″ in the shaft. The keys 49 extend above the balancing plate so that they may be readily withdrawn from slots 51. With this construction it becomes necessary, however, to bind the upper portions of said keys tight into the slots 50 of shaft 13; and for this purpose I provide a split collar comprising two removable segments 52 and 53 best shown in Fig. 3. The segments of this split collar embrace the keys 49 and when in position serve to bind them tightly into the aforesaid slots. The periphery of the segments 52 and 53 is provided with screw-threads 54, Figs. 4 and 5, and a similarly threaded annular collar 55 is screwed onto segments 52 and 53 and serves to rigidly hold them in position. The set screw 56 is also provided and sets the collar 55 firmly onto segment 52. By this construction balancing plate 46 may be easily and rapidly disconnected from the power shaft 13, and is also rigidly connected with said shaft in such manner that all the weight carried by the shaft may be imparted to and sustained by the balancing plate 46.

It will be seen that the fluid tight chamber 48 is bounded above by the balancing plate 46 and is connected below through conduit 37, pipe 57, safety valve 58 and pipe 59 to the fluid pump 60. This pump is of any preferred construction and is shown to be driven by an electric motor 61. An oil-containing reservoir or sump 62 is located beneath safety valve 58 and a suction pipe 63 extends into the oil in said sump and is adapted to conduct same to the fluid pump 60. When motor 61 drives pump 60, oil from the sump 62 will be forced under high pressure through pipe 59 into the fluid tight chamber 48 where its pressure will act upwardly on balancing plate 46. If the fluid pressure in said chamber is correctly chosen its upward effort on the balancing plate 46 will balance all the weight of shaft 13 and the parts supported by same. In this condition the power shaft is said to float, and its weight will be suspended from or supported on the upper surface of the fluid in chamber 48. As the shaft rotates in this floating condition the supporting friction of same will be slight and will include only the resistance between the supporting fluid surface and the balancing plate 46, and between the packing ring 45 and the ring slot 44. The shaft 13 often runs approximately at 1000 revolutions per minute and supports a total weight of 2000 pounds or more; and I have found that under these conditions suspension from a fluid surface is essential if durability and efficiency are to be attained. It might seem to be a preferred mode of operation to have the shaft always suspended in a floating condition, but in practice several effects conspire and make constant floating difficult. The fluid pressure in chamber 48 is sometimes either superfluous or deficient, so that a summation of shaft forces, including the fluid pressure on the balancing plate, the shaft weight, the impeller weight and the water weight will leave a resultant upward or downward force of the shaft. Safety valve 58 is of ordinary conventional construction and tends to prevent any surplus fluid pressure on the balancing plate 46, the safety valve operating to release a portion of the fluid acting on the balancing plate and thereby eradicating the surplus pressure referred to. The fluid released by the safety valve will drop into the oil sump beneath, thereby preventing any waste of same. As a safeguard, however, against failure of the safety valve 58 I provide auxiliary bearing

means adapted to sustain any resultant upward force of the shaft, said upward force being occasioned by surplus fluid pressure on the balancing plate 46. This auxiliary bearing means is located directly above collar 55 and comprises the following parts: A circular ball race 64' is cut in the upper surface of collar 55, and a series of hard steel anti-friction balls 65 are adapted to run in the same. Above said balls, and spaced apart from same, is another ball race 66 cut in a wear plate 67. Wear plate 67 is attached by screws 68 to a neck 69 depending from a casting generally referred to as 70, the said casting being rigidly secured at its lower end to casting 22 by means of bolts 71. By providing this auxiliary bearing means the objection to superfluous fluid pressure in chamber 48 is overcome, because the resultant upward shaft force will be adequately sustained by the anti-friction balls 65 and wear plate 67.

The upper face of flange 30 is formed with two offset seats 72 and 73 joined by the vertical shoulder 74, and the lower face of flange 75, of casting 70, is formed with both similar but conversely offset seats. The offset seats 17 and 18 on the discharge Y 7 and casting 22, and also the offset seats 72 and 73 of the castings 22 and 70, serve to maintain the discharge Y and the castings 22 and 70 in perfect alinement, and additionally serve to provide fluid tight joint between said elements. Above flange 75 the casting 70 is built with a cylindrical portion 76 which forms a second chamber 77 surrounding and including both the fluid tight chamber 48 and the auxiliary bearing means above referred to.

Under normal operation fluid will slowly leak from the chamber 48 past the packing ring 45 into the chamber 77. There being no escape for this fluid from the lower part of chamber 77 the same will gradually fill said chamber until the whole of the balancing plate and also the balls 65 of the auxiliary means will be immersed. An overflow pipe 78 taps chamber 77 above the auxiliary bearing means and serves to conduct the fluid from chamber 77 back to sump 62 when said fluid rises above the level of said overflow pipe. For purposes of clearness, however, the operating fluid has been omitted from chamber 77.

By choosing clean oil as the fluid for operating my bearing, no sand or grit will be injected between the active parts and a good wearing capacity will be thereby procured. Also there will be no rusting tendency of the bearing parts and the delays and danger introduced by rusted metal will be avoided. Also the whole of the fluid bearing and the auxiliary bearing means being immersed in the oil, an efficient and adequate lubrication will always exist at every friction point. Also by providing overflow pipe 78 no oil is wasted and economy of operation is a prominent feature in my installation.

As a safeguard against pressure deficiency of the fluid in chamber 48 I provide a second auxiliary bearing means located within the cylindrical portion 79 of casting 70. A web 80 extends across casting 70 between the cylindrical portions 76 and 79 and from said web rises a boss 80'. An enlarged aperture 81 is provided in said boss and permits power shaft 13 to pass through same, the said aperture being flared into an upper concave seat 82. Into aperture 81 and concave seat 82 fits an appropriately shaped casting 83, the same having a projecting drum 84 and a central aperture 85, the latter being adapted to loosely embrace power shaft 13. A circular disk casting 86 is formed with an inclined wheel race 88 extending in a circle completely around said casting. From the bottom of casting 86 depend two lugs 89 positioned so as to interfere with corresponding lugs 90 rising from web 80 of casting 86. The lugs 89 and 90 cooperate to arrest and prevent rotation of casting 86 and casting 83 around shaft 13. A cast annular frame 91 carrier three inclined anti-friction wheels 92, Figs. 1 and 2, said anti-friction wheels being journaled to the frame by means of pins 93, and said wheels being adapted to run in the wheel race 88. The cast frame 91 is provided with an aperture 94 and within said aperture is positioned a casting 95 having a lower inclined face 96 adapted to rest and roll upon the inclined anti-friction wheels 92. The power shaft 13 is threaded above at 97, and a similarly threaded collar 98 is screwed rigidly onto the same. The pin 99 projects into the collar 98 and into the casting 95 and rotatively binds same, so that when collar 98 is screwed home, casting 95 and shaft 13 are bound to each other. When there is a pressure deficiency on balancing plate 46 a resultant downward force exists on power shaft 13. This force is transmitted to casting 95 and from same is passed to and sustained on the auxiliary bearing means comprising anti-friction wheels 92 and cast ring 95. As shaft 13 and casting 95 rotate the wheels 92 will roll around the wheel race 88 and due to the relative radial distances of inclined face 96, and inclined wheel race 88 from the center of shaft 13, the cast frame 91 will rotate at a slow speed compared with that of the shaft 13 or casting 95. By this construction the friction necessary to support the rotating shaft is negligible, despite the resultant downward force of same.

At the upper extremity, shaft 13 is provided with a belt pulley 14 rigidly mounted on the shaft by any suitable means such as

the square thread 100, and power is imparted to same by any ordinary belt as will be readily understood.

All of the above described construction discloses in detail one form of mechanism whereby the benefits of this invention may be secured. It will be understood, though, that many of these details may be varied very extensively without departing from the spirit of this invention as claimed below. Thus, this invention is not avoided by using any other suitable form of fluid operated bearing whatever, so long as it is located substantially at the top of the relatively long power shaft so that the shaft practically depends from the bearing and by its own weight tends to draw itself into a substantially straight vertical line. Though it is preferable also to use auxiliary or supplementary bearing means for the purpose of supporting any upward or downward thrusts on the power shaft, nevertheless an operative structure is produced without any of these supplementary bearing means, and this structure is also included in this present invention. This being so, it is, of course, understood that the auxiliary bearings may take any form whatsoever without regard to the above described details which show only one form of the invention.

In starting the well mechanism embracing this invention the pumping means 60 is brought into operation to raise the oil pressure in chamber 48 until the vertical weights or forces on shaft 13 are balanced and said shaft floats on the oil surface. Power is then imparted to pulley 14 and is transmitted by shaft 13 to the impeller 10 which effects the pumping and discharging of the water through discharge Y 7. If for any reason a surplus or deficient oil pressure exists on the balancing plate, the auxiliary bearing means located either within the cylindrical portion 76 or the cylindrical portion 79, of casting 70, will operate to sustain the resultant force of the shaft.

The provision of the auxiliary bearing means for sustaining any resultant downward force of the shaft over and above the force counterbalanced by the fluid bearing, is very important in pump installations for the following reason: The installation is usually driven directly or indirectly either by an electrical motor, a gas engine or other source of motive power. The speed variations of the prime mover are minimized as much as possible considering the practical conditions of operation but there may, however, be some speed variations due to voltage changes when the electric motor is used or to changes in the quality of the gas when a gas engine is used, and these variations are, of course, beyond the control of the operator. If the speed of the shaft goes up the rotary speed of the impeller would also go up and the velocity at which water is raised by the installation would increase. During this period of changing velocities the downward thrust of the long power shaft would also change due to the changing reaction of the long column of water on the impeller. These velocity changes and the corresponding thrust changes may, with certain types of impellers, become so considerable as to be serious, and are aggravated somewhat by the torsional coil and recoil of the long shaft. It being impossible from a practical standpoint to vary the pressure of the fluid bearing in accordance with the velocity changes and corresponding thrust changes of the shaft, it becomes advantageous to provide the supplementary bearing means for supporting the resultant downward thrust on the shaft. In this event, the fluid pressure on the fluid bearing may be set for the normal velocity and thrust of the shaft and when this velocity and thrust increase the fluid is not pressed out of the fluid bearing, so as to permit the metallic parts of the latter to wear upon and destroy themselves, but the resultant downward thrust is taken up by the supplementary bearing in casing 79.

The above described reaction of the water column is most noticeable with impellers which work partly on a screw principle so as to directly push the water upward. It should also be noticed however that various other distribution of the total shaft thrust between the fluid operated bearing and the supplemental bearing can readily be made. For instance, the pressure in the fluid bearing may be kept at a slightly lower value than that supposed above so that the shaft is always supported somewhat by the supplementary bearing. In this event the shaft will certainly not have any upward or downward movement whatsoever regardless of slight variations of the pressure in the fluid bearing but the exact vertical position of the shaft will be determined by the bearing surfaces in the supplementary bearing. In this sense the fluid operated bearing might be spoken of as a fluid balance serving to balance the greater part of the shaft weight and leaving only so small a portion of the weight as may be readily carried by a supplementary bearing, this latter portion of the weight also serving to hold the shaft steady despite pressure fluctuations in the fluid bearing. Though the supplementary bearing may be located at any preferred or desired point, it is a further advantage to have it also located near the top of the shaft and in reasonably close proximity to the fluid operated bearing. In this event the long and heavy power shaft depends from both bearings and by its own weight tends to

draw itself into a substantially straight vertical line. Such location of the bearing means not only makes the same very accessible for repair and adjustment but also improves the performance of the shaft materially.

If at any time the bearing is to be dismantled for repairs the bolts 71 and the pulley 14 are removed, so that the casting 70 may be raised off casting 22 to display the bearing elements beneath. The bearing being located at the surface of the earth is readily accessible for this purpose and, together with the rapidity by which same may be dismantled, a substantial advance in the art is effected. Furthermore, it is a well-known fact that the power-transmitting capacity of shafts under compression is less than the power-transmitting capacity of shafts under tension. By supporting or suspending the heavy power shaft and pumping impeller from above, and thereby operating said shaft under tension, my invention permits a more complete utilization of the power-transmitting capacity of shaft 13 than is possible in the constructions where the shaft and pumping impeller are supported from below. Also, with this arrangement all buckling and bending tendency of the shaft 13, along with its consequent vibratory and rattling tendency, are obviated.

Attention will now be called to another feature of the invention. As has been above described, the auxiliary bearing in casing 79 includes the boss 80 having the concave seat 82, for supporting the appropriately-shaped bearing casting 83, while by reference to Figs. 1 and 7, it will be seen that the fluid operated bearing has a certain amount of play and clearance both between the depending rim 47 and plate 42, and between the balancing plate 46 and plate 42. Before stating the several purposes of this construction, it may be noticed, however, that in practice the actual play between the depending rim 47 and the plate 42 is not so great as has been illustrated in Figs. 1 and 7 and, in fact, is usually so small that it would be impossible for the figures to show it if it were drawn in correct relative proportion to the remainder of the mechanism. In practice, this play need only be as great as would be encountered in a very loose bearing fit, but for the purpose of bringing it out, this has been considerably exaggerated in Figs. 1 and 7. These features in the auxiliary bearing and in the fluid operated bearing are introduced so that the bearings may accommodate themselves to the shaft as the axis of the latter may from time to time tend to swing or shift around in the bearings with a pendulum action. It is quite essential to the perfect performance of a bearing system at the top of long pump shafts that such swinging reactions should be allowed for, because the shaft 13 penetrating deep into the earth may have its lower end pushed around considerably by the ununiform sliding or settling of the various layers of earth through which the shaft passes. On this account, the sand approximately in the region of the pump may shift the latter, and, therefore, the lower extremity of the shaft—somewhat to the side. The shaft being rigidly connected to the balancing plate in the fluid operated bearing, will, therefore, carry this bearing plate over sidewise and unless the above-referred to play were allowed in the fluid operated bearing the latter would force its parts together unusually hard so as to wear them fast, while the fluid operated bearing would also hold the upper extremity of the shaft in a flexed and strained position with reference to the lower parts of the shaft. By the play shown in Fig. 7, however, all this is avoided so that the fluid operated bearing may readily accommodate itself to the shifts which are incident to the axes of all pump shafts. This problem has been previously solved for roller bearings such as shown in the applicant's casting 70 when such roller bearings were used alone, and the appropriately-shaped casting 83 riding in the concave seat 82 has always been understood by practical well men to be for the purpose of allowing the roller bearing to accommodate itself to such swinging of the pump shaft, so that this feature need, therefore, not be further described, with reference to the roller bearing.

From the foregoing detailed description the construction and mode of operation and coöperation of my novel bearing, pumping means, and other elements are thought to be clear.

I claim:—

1. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft having such length that the shaft would buckle seriously if supported from below, said shaft being driven from above and being adapted to drive said impeller means, a fluid operated bearing coöperating to support said shaft, said fluid operated bearing being located substantially at the top of said long shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, and positively operated means separate from and in addition to said pump means for supplying fluid pressure for said fluid bearing.

2. In deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft

n above and extending downward driven fpeller, said power shaft being to said transmi power to said impeller, adapted ated bearing located substantially a fluid opf said power shaft for supporting at the toand impeller on a fluid surface, said shaoperated means separate from and positivel to said pump for supplying fluid in additi said fluid bearing and auxiliary pressureans for sustaining any resultant bearing thrust of said power shaft.

downwaep well pumping mechanism, the

3. In n with pump means including a combinang located beneath the surface of pumpcand rotary impeller means in said the eartl a long downwardly extending casing, ft driven from above and adapted power sid impeller means, a fluid operated to drive cöperating to support said long bearing iliary bearing means for sustaining shaft, assultant downward thrust on said ing smyl fluid operated bearing and said shaft, sbearing means both being located auxiliarlly at the top of said power shaft substanhe long shaft depends therefrom so that own weight tends to draw itself and by bstantially straight vertical line, into a vely operated means separate from and poslition to said pump means for supand in sid pressure for said fluid operated plying bearingeep well pumping mechanism, the

4. Inon with pump means including a combinang located beneath the surface of pump cand rotary impeller means in said the eart a downwardly extending power casing, ven from above and adapted to shaft c drive said impeller means, a fluid operated bearing coöperating to support said shaft, said fluid operated bearing being located substantially at the op of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, positively operated means separate from and in addition to said pump means for supplying fluid pressure to said fluid bearing, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

5. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing coöperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft and said fluid operated bearing having play so that the fluid bearing may accommodate itself to shifting of the shaft axis, and positively operated means separate from and in addition to said pump means for supplying fluid pressure for said fluid bearing.

In testimony whereof, I have hereunto set my hand at Los Angeles California this 21st day of November 1912.

JOHN A. WINTROATH.

In presence of—
ROBERT O. STURR,
MAMIE WOODS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

Corrections in Letters Patent No. 1,079,679.

It is hereby certified that in Letters Patent No. 1,079,679, granted November 25, 13, upon the application of John A. Wintroath, of Los Angeles, California, for an provement in "Well Mechanism," errors appear in the printed specification requir g correction as follows: Page 1, after line 78, insert the sentence *My invention ates to a novel combination to be used in deep-well pumping mechanisms.;* and page line 93, for the word "carrier" read *carrier;* and that the said Letters Patent ould be read with these corrections therein that the same may conform to the record the case in the Patent Office.

Signed and sealed this 30th day of December, A. D., 1913.

[SEAL.]

J. T NEWTON,
Acting Commissioner of Patents.

47 Mail Room,
Jul- 6, 1915,
U. S. Patent Office.

Division 9,
Jul- 8, 1915,
U. S. Patent Office.

38,254, Paper No. 1.

Petition.

To the Commissioner of Patents:

Your petitioners, Matthew T. Chapman and Mark C. Chapman, citizens of the United States, and residents of Aurora, in the County, of Kane, and State of Illinois, whose post-office addresses are c/o The American Well Works, Aurora, Illinois, pray that Letters Patent may be granted to them for the improvements in Deep Well Pumps, set forth in the annexed specification; and they hereby appoint A. H. Adams and J. L. Jackson, composing the firm of Adams and Jackson, Reg. No. 89, of the City of Chicago, State of Illinois, their attorneys, with full power of association, substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the Patent, and to transact all business in the Patent Office connected therewith.

Signed at *Aurora*, in the County of Kane, and State of *Illinois*, this *28*- day of *June*, 1915.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Revenue Stamp.

Oath.

STATE OF ILLINOIS.
County of Kane, ss:

Matthew T. Chapman, and Mark C. Chapman, being duly sworn, depose and say that they are citizens of the United States and residents of Aurora, in the County of Kane, and State of Illinois; that they verily believe themselves to be the original, first and joint inventors of the improvements in Deep Well Pumps, described and claimed in the annexed specification; that they do not know and do not believe that the same were ever known or used before their invention or discovery thereof; or patented, or described in any printed publication in any country before their invention or discovery thereof, or more than two years prior to the filing of their application, Serial No. 482,517, of which this is a division; or in public use or on sale in the United States for more than two years prior to said application; and that no application for patent for said improvements has been filed by them or their representatives or assigns in any foreign country.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

48 Subscribed and sworn to before me this *28* day of *June*, 1915.

[SEAL.] W. E. KNICKERBOCKER,
Notary Public.

Specification.

To all whom it may concern:

Be it known that we, Matthew T. Chapman and Mark C. Chapman, citizens of the United States residing at Aurora, in the County of Kane, State of Illinois, have invented certain new and useful improvements in Deep Well Pumps, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to pumps for raising water from deep wells, being a division of our application, 482,517, which was Insert A'. filed on March 10, 1909, ^ It is one of the objects A'

of our invention to provide a liquid balancing means in connection with the shaft of a rotary deep well pump by which the shaft is adapted to be raised off of its auxiliary bearings and rotatably sustained upon a film of liquid escaping between oppositely-disposed parts of our balancing mechanism. It is another object of our invention to provide an improved form of balancing mechanism in which the parts between which the sustaining film of water escapes have a flat butting engagement whereby any wear which may result in use can be compensated for by a suitable adjustment of the parts. It is another object of our invention to provide a new and improved form of coupling devices by which the several sections of the well tube and shaft casing are connected together, and suitable bearings are provided for the shaft. It is another object of our invention to provide a new and improved arrangement of well tube, shaft casing, shaft, runner, and auxiliary anti-friction bearing for the upper end of the shaft by which the shaft may be tightened and straightened relative to the shaft casing and the well tube. It is another object of our invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which we have accomplished our several objects are illustrated in the accompanying drawings and are hereinafter specifically described. That which we believe to be new and desire to cover by this application is set forth in the claims.

In the drawings:

Fig. 1 is a view, mostly in vertical section, showing a pumping mechanism embodying our improvements;

Fig. 2 is an enlarged detail illustrating the liquid balancing means; and

Fig. 3 is an enlarged detail illustrating our improved coupling mechanism.

Referring to the several figures of the drawings in which corresponding parts are indicated by the same reference characters,—

10 indicates a standard having laterally-projecting lugs 11 on which rests a casting 12 which carries the auxiliary bearing
49 means hereinafter described for supporting the shaft 13, together with means for lubricating such bearings. The upper end of the shaft 13 is connected by means of a coupling device 14 of

any suitable type with a motor 15 supported by the standard 10. The auxiliary bearings comprise a casing 16 mounted by means of screw-threads upon the upper end of the casting 12, a set-screw 17 being provided for locking the casing 16 in the desired adjusted position relative to the casting 12. The casing 16 supports an anti-friction bearing 18 of any suitable type, which underlies a collar 19 adjustably fixed by means of set screws upon the shaft 13. An anti-friction bearing 20 is mounted upon the shaft 13 below the casting 12, a collar 21 being adjustably mounted upon the shaft 13 in engagement with the bearing 20, the arrangement being such that the bearing 20 is adapted to receive any upward thrust upon the shaft 13. The construction comprises ducts 22-23 leading from one to the other of the bearings 18-20, together with means for causing a circulation of a suitable lubricant therethrough, but inasmuch as such lubricating means forms no part of our present invention it is not believed to be necessary to describe it in detail herein.

24 indicates a base-plate from which the standard 10 rises, such base-plate being provided with the central opening. The upper section 25 of the well tube is secured in any suitable manner to the base-plate 24 below the central opening therethrough, and an elbow discharge-member 26 is connected in any suitable manner above the plate 24 so as to form a continuation of the well tube 25. The elbow outlet-member 26 is provided with an upwardly-extending sleeve 27 upon which is mounted in any suitable manner the lower member 28 of a casing hereinafter more particularly described. To the casing member 28 is connected by means of screw-threads or in any other suitable manner the upper end of the uppermost shaft casing section 29 which extends downward through the sleeve 27 and through the well tube 25 about the shaft 13.

Our improved coupling means for coupling together the several sections of the well tubing and the shaft casing comprises a spider 30 provided with an annular ring portion 31 extending between the adjacent ends of the well tube sections 25. Each section 25 of the well tube is provided with a collar 32 mounted thereon by means of screw-threads, the collar 32 and the ring 31 of the spider 30 being tightly connected together by means of a plurality of bolts 33. The spider 30 also comprises arms 34 extending from the annular portion 31 to the hub portion 35, the outer ends of the arms 34 being bevelled as shown in Fig. 3 so as to guide the spider into centered position relative to the lowermost one of the two connected well tube sections 25. The hub 35 of the spider is provided with a lining 36 of babbitt metal, or other suitable material, forming a bearing for the bearing sleeve 37 mounted upon the shaft 13, the sleeve 37 being held in position upon the shaft 13 by means of a pin 38. The adjacent sections of shafting 13 are connected together by means of a coupling 39 of any suitable type.

Mounted upon the lower end of the shaft 13 is a plurality of runners or propellers 40 of any suitable type adapted to operate in suitable pump casings 41, also of any suitable type. Below the lowermost runner 40 there is provided a bearing 42

adapted to hold the shaft 13 against lateral movement, such bearing being enclosed in a suitable

housing 43. The shaft casing 29 is provided with a number of openings 44 therein at its lower end covered by a wire netting 45. Inasmuch as the runners, the pump casings, the bearing and the lower end of the lowermost section of casing 29 are formed and operate in precisely the manner set forth in the patent, No. 1,149,633, above referred to Per A. ∧ [our said application, 482,517,],* it is believed to be unnecessary to further describe them herein. A pipe 46 is provided communicating with the uppermost section of shaft casing 29 for the purpose of supplying water to the shaft casing for lubricating the bearings of the shaft before starting the pump in operation, as set forth in our patent Per A. said ∧ [application].*

Our improved liquid balancing means comprises a casing member 47 supported by the casing member 28, the casing member 47 being provided with a downward extension 48 adapted to have suitable packing means placed therein about the shaft 13, such packing to be held in position by an adjustable gland 49. A plate 50 adjustably fixed upon the shaft 13 overlies the upper edge of the casing 47, having a stepped engagement with the said casing. A casing member 51 cooperates with the casing member 28 to enclose the plate 50 and the casing member 47. An outlet pipe 52 leads from one side of the casing 28-51. An inlet pipe 53 communicates with a duct 54 formed in the wall of the casing member 28 communicating through a suitable opening in the bottom of the casing 47. The arrangement is such that water under pressure admitted through the pipe 53 from any suitable source of supply presses upward on the plate or piston 50. When the pressure within the casing 47 reaches a certain maximum, the plate or piston 50 with the connected shaft 13 will be raised slightly so as to permit a film of water to escape between the upper edge of the casing 47 and the engaging face of the said plate or piston, the pump shaft being caused thus to rotate on a film of water, materially reducing the friction and improving the operation of the pump.

What we claim as our invention and desire to cover by Letters Patent, is:

51 Per A.

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1. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth, and rotary impeller means in said casing, of a downwardly-extending power shaft having such length that the shaft would

[*Words and figures enclosed in brackets erased in copy.]

buckle seriously if supported from below, said shaft being driven from above and being adapted to drive said impeller means, a fluid-operated bearing co-operating to support said shaft, said fluid-operated bearing being located substantially at the top of said long shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, and means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means.

[Matter enclosed between rules erased in copy.]

1A [2].* In a deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

2A [3].* In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing co-operating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into a substantially straight vertical line, and means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means.

3A [4].* In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

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[* Words and figures enclosed in brackets erased in copy.]

Per A.

5. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft and said fluid operated bearing having play so that the fluid bearing may accommodate itself to shifting of the shaft axis, and means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means.

[Matter enclosed between rules erased in copy.]

Per B.

4A [6].* In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, said pump-shaft being adjustable vertically, a water-pressure-operated governor at the upper end portion of said pump-shaft for supporting and adjusting the same, and a bearing at the lower end portion of said pump-shaft.

[Matter enclosed between rules erased in copy.]

Per A.

7. In a deep well pumping mechanism, the combination of a downwardly-extending power-shaft, pumping means carried thereby, said shaft being driven from above, and a fluid-operated bearing located near the top of said shaft, said shaft being suspended from said bearing.

8. In a deep well pumping mechanism, the combination of a downwardly-extending power-shaft, pumping means carried thereby, said shaft being driven from above, a fluid-operated bearing located near the top of said shaft, said shaft being suspended from said bearing, and means for supplying fluid under pressure to said bearing.

53 9. The combination with a well-casing, of a rotary pump located therein below the surface of the earth, said pump comprising a power-shaft driven from the top, and a liquid-operated bearing located at the surface, said bearing supporting the weight of said shaft.

[* Words and figures enclosed in brackets erased in copy.]

10. In a deep well pumping mechanism, the combination of a well tube, a shaft extending downward in said well tube, a runner adapted to be rotated by said shaft for forcing liquid upward through said well tube, and a liquid balancing means adapted to receive the downward thrust of the shaft, said liquid balancing means comprising an annual casing member surrounding said shaft, means for supplying liquid under pressure to said casing, and a plate fixed on said shaft overlying the upper edge of said casing whereby the shaft is adapted to rotate on a film of liquid escaping between the edge of the casing and the plate as the plate and shaft are raised relative to the casing by the pressure of the liquid in said casing.

[Matter enclosed between rules erased in copy.]

Per B.

5[A] [11].* In a deep well pumping mechanism, the combination of a well tube, a shaft extending downward in said well tube, a runner adapted to be rotated by said shaft for forcing liquid upward through said well tube, and a liquid balancing means adapted to receive the downward thrust of the shaft, said liquid balancing means comprising an annular casing member surrounding said shaft, and provided with a downwardly-projecting central extension adapted to receive a suitable packing, a gland closing the upper end of said extension, means for supplying liquid under pressure to said casing, and a plate fixed on said shaft overlying the upper edge of said casing whereby the shaft is adapted to rotate on a film of liquid escaping between the edge of the casing and the plate as the plate and shaft are raised relative to the casing by the pressure of the liquid in said casing.

[Matter enclosed between rules erased in copy.]

4[B] [6[A], 12].* In a deep well pumping mechanism, the combination of a well tube, a shaft extending downward in said well tube, a runner adapted to be rotated by said shaft for forcing liquid upward through said well tube, and a liquid balancing means adapted to receive the downward thrust of the shaft, said liquid balancing means comprising an annular casing member surrounding said shaft, means for supplying liquid under pressure to said casing, and a plate fixed on said shaft having a stepped bearing edge overlaying the upper edge of said casing whereby the shaft is adapted to rotate on a film of liquid escaping between the edge of the casing and the stepped edge of the plate as the plate and shaft are raised relative to the casing by the pressure of the liquid in said casing.

[* Words and figures enclosed in brackets erased in copy.]

54 Per A.

13. In a deep well pumping mechanism, the combination of a well tube, a shaft extending downward in said well tube, a runner adapted to be rotated by said shaft for forcing liquid upward through said well tube, and a liquid balancing means adapted to receive the downward thrust of the shaft, said liquid balancing means comprising an annular casing member surrounding said shaft, means for supplying liquid under pressure to said casing, a plate fixed on said shaft overlying the upper edge of said casing whereby the shaft is adapted to rotate on a film of liquid escaping between the edge of the casing and the plate as the plate and shaft are raised relative to the casing by the pressure of the liquid in said casing, a second casing surrounding said first-named casing and closure plate, and a drain pipe leading from said second casing.

[Matter enclosed between rules erased in copy.]

5[b] [7[a], 14].* In a deep-well pump, the combination of a well-tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well tube, a plurality of sleeve sections enclosing said shaft, and a coupling device coupling the several sections of the well tube and said sleeve sections, said coupling device comprising a spider upon which said sleeves are screwed, said spider projecting between the adjacent ends of adjoining sections of the well-tube, and coupling-rings outside of the well tube and secured to the spider at opposite sides of the projecting portion thereof for securing the sections of the well tube thereto.

6[b] [8[a], 15].* In a deep well pump, the combination of a well tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well tube, a plurality of sleeve sections enclosing said shaft, a coupling device coupling the several sections of the well tube and said sleeve sections, said coupling device comprising a spider having a screw-threaded connection with said sleeves, said spider projecting between the adjacent ends of adjoining sections of the well tube, coupling-rings screwed upon the outside of the sections of well tube respectively, means for securing said coupling-rings to the annular projecting portion of said spider, and a bearing carried by said spider for said shaft.

7[b] [9[a], 16].* In a deep well pump, the combination of a well tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well tube, a plurality of sleeve sections enclosing said shaft, and a coupling device coupling the several sections of the well tube and said sleeve sections, said coupling devices comprising a spider having a tapered centering seat upon one of said sections of well-tube, said sleeve being screwed upon said spider, said spider pro-

[* Words and figures enclosed in brackets erased in copy.]

jecting between the adjacent ends of adjoining sections of the well tube, coupling-rings screwed upon the outside of the sections
55 of well tube respectively and means for securing said coupling-rings to the annular projecting portion of said spider.

Per A.

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7. In a pump, the combination of a well tube, a shaft extending downward therein, a shaft casing about said shaft within said well tube, means for holding the lower end of said shaft casing in fixed position relative to said well tube, a runner adapted to be rotated by said shaft, means serving to hold the lower end of said shaft down relative to said shaft casing, and means for adjusting the upper end of said shaft vertically relative to said casing for tightening and straightening the shaft in said casing.

18. In a pump, the combination of a well tube, a shaft extending downward therein, a shaft casing about said shaft within said well tube, means for holding the lower end of said shaft casing in fixed position relative to said well tube, a runner adapted to be rotated by said shaft, means serving to hold the lower end of said shaft down relative to said shaft casing, means for adjusting the upper end of said shaft vertically relative to said casing for tightening and straightening the shaft in said casing, and bearings along said casing adapted to hold said shaft in spaced relation relative to said casing.

19. In a pump, the combination of a well tube, a shaft extending downward therein, a shaft casing about said shaft within said well tube, means for holding the lower end of said shaft casing in fixed position relative to said well tube, a bearing for said shaft held in fixed position relative to said well tube, a runner fixedly mounted on said shaft below said bearing adapted to hold the lower end of the shaft downward relative to the well tube and the shaft casing, and means for adjusting the upper end of said shaft vertically relative to said casing for tightening and straightening the shaft in said casing.

[Matter enclosed between rules erased in copy.]

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Paper No. 2.

January 27, 1916.

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Chapman & Chapman. For Deep Well Pumps. Filed July 6, 1915. Ser. No. 38,254.

This application has been examined.

This case is one of those to which the Commissioner's Order No. 2210, of June 28, 1915, is directed and under which order any action

56 on behalf of the applicants which does not put the application in condition for allowance or final rejection must be submitted to a Law Examiner for his approval of its entry.

The application referred to in lines 8 and 9 of page 1 and line 6 of page 5 having become patent No. 1,149,633, granted Aug. 10, 1915, the data of the patent should be substituted for or added to the data of the application.

Claims 1, 7, 8, and 9 are rejected on either Snow, #669,601, Mar. 12, 1901, Class 64-47 (Pumps, Open Screw), or the rotary well pump provided with a fluid thrust bearing shown in the plates interposed between pages 10 and 11 of the 23rd Annual Report of the Board of Water Commissioners of the City of Madison, Wisconsin, for the year ending Sept. 30, 1905, Wisconsin Botschafter Print, Madison, Wis., 1906. Copies of these reports including the one cited are on file at the John Crerar Library, Chicago, Ill., or a copy of the report cited may be seen in Division 9 of this office.

The feature defined in claim 5, lines 8 and 9, by the expression "said fluid operated bearing having play so that the fluid bearing may accommodate itself to shifting of the shaft axis" is not seen to be supported by the description or the showing in the drawing or within the original disclosure. The claim is otherwise held not patentable over either Snow or the Madison Report, both cited above.

Claim 6 is rejected on Snow above cited in view of the tail bearing below the impeller as shown in either Alvord, #735,692, Aug. 11, 1903, Class 253-199, or Ivens, #682,939, Sept. 17, 1901, Pumps, Rotary Single Piston (Cent. Deep Well).

Claims 10 to 13 are rejected on the showing in the Madison Report above cited, it not being seen that claims 11 and 12, which define the extension to plate 50, state anything requiring invention over the reference.

Claims 14, 15, and 16 are rejected on the ground that they distinguish from the combined coupling and shaft bearing member shown in Fig. 1 of Ellis, #819,986, May 8, 1906, Pumps, Rotary Single Piston (Cent. Deep Well), in view of the coupling of Bowers, #442,947, Dec. 16, 1890, Class 137-28, and the element *d* of Wiesenbach, #669,209, Mar. 5, 1901, Machine Elements, Cranks & Wrist Pins (Pumps, Elements, Operating Devices), only by a definition of features involving nothing more than mechanical skill and not requiring invention.

Claims 17, 18, and 19 are clearly met in Layne, #957,974, May 17, 1910, Class 253-199, attention being also called to Layne Reis. #13,467, Sept. 24, 1912, same class.

Claims 2, 3, and 4 are deemed allowable subject to a possible interference with the patent to Wintroath, #1,079,679, Nov. 25, 1913, Pumps, Rotary Single Piston (Cent.).

As further showing the state of the art attention is called to

Jackson, #986,827, Mar. 14, 1911. Class 253-199;

Stumpf, 783,153, Feb. 21, 1905, (Class 121, Rot. Imp. Com. (Pumps, Rotary, Cent.).

F. M. TRYON, *Ex.*

F. W. B.

57 Mail Room,
Feb. 7, 1916,
U. S. Patent Office.

Division 9,
Feb. 8, 1916,
U. S. Patent Office.

Paper No. 3.

Amendment.

A.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pumps. Filed July 6, 1915. Serial No. 38,254.

Feb. 5, 1916.

Hon. Commissioner of Patents.

SIR: In response to Office letter of January 27, 1916, we hereby amend as follows:—

Page 1, line 17 from the bottom of the page, change the period after "1909" to a comma and insert

A'. upon which application patent No. 1,149,633, was granted on August 10, 1915.

Page 5, line 6, cancel "our said application, 482,517," and insert —the patent, No. 1,149,633, above referred to,—

Page 5, line 12, cancel "application" and insert —patent—

Cancel claim 1, claim 5, claims 7, 8, 9 and 10, claim 13, and claims 17, 18 and 19, and change the numerals of the remaining claims accordingly.

In view of the foregoing amendments reconsideration and an allowance of this application are respectfully requested. The formal corrections noted by the Office have been taken care of.

It is believed that claim 6 is fairly allowable over the references cited against it. It is true that the Snow patent discloses the use of a number of the elements covered by claim 6. The Alvord patent, and the Ivens patent both disclose the use of a tail-bearing for the shaft of a rotary pump. But there is no suggestion in either the Ivens or the Alvord patent that the tail-bearing disclosed could be used with the construction shown by Snow. It is believed there is

sufficient cooperation between the fluid thrust-bearing and the
58 tail-bearing to warrant a holding that the claim in question covers a true combination rather than a mere aggregation, the fluid thrust-bearing and the tail-bearing being used cooperatively for the proper control of the same pump-shaft. In the absence of any citation showing or suggesting the combination called for, it is believed that there is warrant for an allowance of a claim covering such novel combination in view of the more perfect and more complete control of the shaft by the use of such structure. It is believed that upon reconsideration this claim will be seen to be allowable.

Former claims 11 and 12 (now claims 5 and 6) are believed to be sufficiently differentiated from the references to warrant their allowance. These claims are restricted quite closely to the detailed construction disclosed by applicants, and it is believed that the Office would not be doing violence to the interests of any one by an allowance of the detailed claims in question. In reading former claims 10 and 13 upon the structure of the Madison report, it was necessary to consider the lower one of the two brass plates of the thrust-bearing as comprising an annular casing surrounding the shaft. In view of the fact that such brass plate apparently subserves the same purpose, generally speaking, as does the casing 47 of applicants, it is believed that such an interpretation of the claims is probably not far-fetched, but it is believed that the Office should not go the step or steps further required for holding the said brass plate of the structure of the Madison report as the equivalent of the particular construction claimed more in detail in former claims 11 and 12. In view of the fact that the structures set forth in claims 11 and 12 are not shown by the citation either in the precise form or in a form only colorably different, it is believed that former claims 11 and 12 should be allowed.

An allowance of former claims 14, 15 and 16 is also requested. No one of the references cited by the Office shows the combination of these claims. It may seem that the changes made by applicants are trifling and of no especial merit, but we believe any such impression is erroneous. It is not believed that the Wiesenbach patent is of any special pertinence. It was cited, we presume, in view of its disclosure of a plate *d* extending across between two flanged cylindrical parts *n-n*. It will be conceded that if the Bowers construction had the plate *d* of Wiesenbach with its shaft-bearing substituted in place of the packing-ring *d* of Bowers, such supposed construction would be similar in several respects to the structure covered by these claims. The supposed structure would not, however, in any event meet the terms of the claims in question. Even if the structure of the supposed combination of Bowers and Wiesenbach were then provided with the casing or sleeve members 9 of the Ellis patent construction and the small coupling sleeves used in connection with such casing members 9, even then the resulting structure would not be such as to enable the claims to be read strictly thereon. In view of the fact that it is by no means clear that an adaptation of the devices of the

three patents to each other could be effected without the exercise of the inventive faculty, and in view of the further fact that even if such combination were effected, as above suggested, the claims
59 could not then be read in terms upon the resulting structure, it is believed that the objection to the claims should be withdrawn.

It is believed that the differences between applicants' structure, as set forth in these claims, and the structure of the Ellis patent, which is the only one of the three references which is directed toward similar subject-matter, are such, as viewed from a practical standpoint, as to form the basis for allowable claims. Referring to Fig. 1 of the Ellis patent it will be clear that, in assembling the pumping mechanism for lowering it into a well, the lowermost section 9 will be held stationary relative to the corresponding section 1 of the well-tube. The coupling member 10^b would then be secured in position upon the upper end of the casing member 9, and the coupling-sleeve 12 would presumably be secured in position about the member 10 and upon the upper end of the casing member 1. The sleeve 12, however, would have no tendency to draw the spider 10 into close union with the member 1, by reason of the fact that the spider 10 is held against rotation relative to the section 1. The casing section 9 can readily be secured to the upper end of the hub of the spider 10, and the upper well-tube section 1 can be tightened into contact relative to the spider 10. It is just possible that the operation of assembling might be so worked out as to enable the spider 10 to be tightened upon the upper end of the lower well-tube section 1, if sufficient care be taken in timing one portion of the operation relative to the remaining portions, but it is clear that if this result is attainable at all it is attainable only by the use of considerable care.

In the use of applicants' coupling, on the contrary, no such difficulty is encountered. With a sleeve 32 in position [with the sleeve 12 in position]* on the upper end of a lower well-tube section 25, the spider 30 can be screwed into the upper end of a lower casing section 29. The upper casing section 29 can then very readily be screwed into position, and the upper well-tube section 25, with a sleeve 32 secured thereon, can easily and quickly be secured by means of the bolts 33 rigidly in position, there being no difficulty whatever in making the joint between the sections 25 and the spider 30 as tight as may be desired.

The above explanation sets forth merely one of the disadvantages characteristic of one of the prior devices as compared with applicants' construction, but it is believed to be sufficient to demonstrate that the different constructions in question are by no means mechanical equivalents of each other and to call attention to the fact that there are a considerable number of elements to be taken into consideration in the organization and arrangement of a coupling device of this

[*Words and figures enclosed in brackets erased in copy.]

pe. It would seem therefore that the position of the Office that ly mechanical skill was involved in the production of the subject-atter of former claims 14, 15 and 16 should not be insisted on.
Favorable action is very respectfully requested.

Respectfully,

ADAMS & JACKSON,
Attorneys for Applicants.

Paper No. 4.

February 12, 1916.

lams & Jackson, Monadnock Block, Chicago, Ill.:

apman & Chapman. For Deep Well Pumps. Filed July 6, 1915. Ser. No. 38,254.

This application has been considered as amended Feb. 7, 1916.
Claim 4 is rejected on Alvord, #735,691, Aug. 11, 1903, Class 3-179, in view of Snow of record. Alvord discloses a pumping echanism having a water-pressure operated governor above the mp impeller and provided with a bearing at the lower end portion the pump shaft. In view of Snow it is held that it did not require vention to place the pressure governor at the upper end portion of e pump shaft.
Claim 5 is rejected on the showing in the plates interposed between ges 10 and 11 of the Madison report of record. A careful inspec-n of this showing discloses all the elements stated in claim 5 with e exception of an adjustable gland stuffing-box, and to apply this atture, which with its function is well known, it is held did not in-lve invention.
Claims 6 to 9 inclusive may be allowed as at present advised.
Claims 1, 2, and 3 stand allowed.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
Feb. 28, 1916,
U. S. Patent Office

Division 9,
Feb. 29, 1916,
U. S. Patent Office.

Paper No. 5.

Amendment.

United States Patent Office.

Div. 9, Room 142.

B.

In the Matter of the Application of Chapman & Chapman. Deep Well Pumps. Filed July 6, 1915. Ser. No. 38,254.

Feb. 26, 1916.

Hon. Commissioner of Patents.

SIR: In response to Office letter of Feb. 12, *1916, we hereby amend by cancelling claims 4 and 5 and renumbering the remaining claims accordingly.*

61 Inasmuch as the above amendment meets fully the requirements of the Office letter, a prompt allowance is very respectfully requested.

Respectfully,

ADAMS & JACKSON,
Attorneys for the Applicants.

Paper No. *1.*

Mar. 14, 1916.

March 21, 1916.

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Application of Matthew T. & Mark C. Chapman for Deep Well Pumps. Filed July 6, 1915. Ser. No. 38,254.

39,684.

1. In a deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending

downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means,

and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

2. In a deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into substantially straight vertical line, and means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means.

3. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action *of the action* of the pump means, auxiliary bearing means for sustaining any
62 resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

The interference involves your application above identified and a patent for "Well Mechanism," granted to John A. Wintroath, of 900 Santa Fe Ave., Los Angeles, Cal., Nov. 25, 1913, No. 1,079,679, application filed Dec. 2, 1912, Ser. No. 734,649, attorney of record Jas. R. Townsend, of San Fernando Bldg., Los Angeles, Cal., assignee Layne & Bowler Corporation, of Los Angeles, Cal.

The relation of the counts of the interference to the claims of the respective parties is as follows:

Counts.	Chapman & Chapman.	Wintroath.
1	1	2
2	2	3
3	3	4

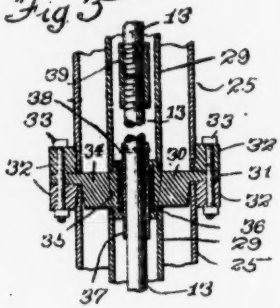
P. D. HASKELL,
Acting Ex.

F. W. B.

Fly S. W. 11 31254

456
Chapman
v.
Wintroath
} $62\frac{1}{2}$

Fig. 3



60
9

Fig. 1

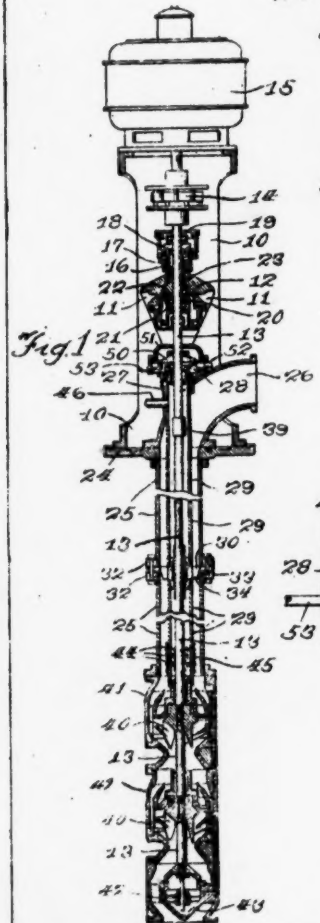
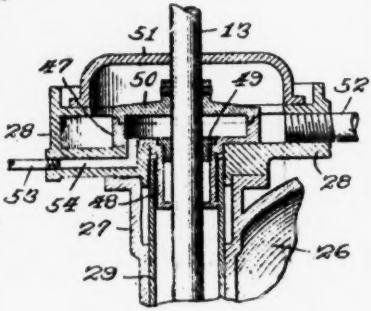


Fig. 2



Inventors.
Matthew J. Chapman.
Mina C. Chapman.
Adams & Pearson.
Attys

By

No 1132, Patent appeal docket. 78 92
Wintroath
v.
Pp. 92

62 1/2

2-251.

Room No. 142.

Address only "The Commissioner of Patents, Washington, D. C."

Letter No. —.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C., March 11, 1916.

Examiner of Interferences:

An interference is found to exist between the following cases, and in respect to the invention therein specified, to wit:

Cases.

1. Name, Matthew T. & Mark C. Chapman.
Post-office addresses, care The American Well Works, Aurora, Ill.
Title, Deep Well Pumps.
Filed July 6, 1915. Ser. No. 38,254. Pat'd —— —, ——. No. —. Div. of 482,517, filed Mar. 10, 1909.
Attorneys, Adams & Jackson, of Monadnock Block, Chicago, Ill.
Associate att'y, —— ——, of ——.
Assignee, The American Well Works, of Aurora, Ill.

(Here follows diagram marked page 62½.)

63 2. Name, John A. Wintroath.
Post-office address, 900 Santa Fe Ave., Los Angeles, Cal.
Title, Well Mechanism.
Filed Dec. 2, 1912. Ser. No. 734,649. Pat'd Nov. 25, 1913. No. 1,079,679.
Attorney, Jas. R. Townsend, of San Fernando Bldg., Los Angeles, Cal.
Associate att'y, Robert A. Steps, of Washington, D. C.
Assignee, Layne & Bowler Corporation, of Los Angeles, Cal.

3. Name, —— ——.
Post-office address, ——.
Title, ——.
Filed —— —, ——. Ser. No. —. Pat'd —— —, ——. No. —.
Attorney, —— ——, of ——.
Associate att'y, —— ——, of ——.
Assignee, —— ——, of ——.

Intf. Number 39,684.
Intf. Declared Mar. 21, 1916.
Statements Due May 1, 1916.

Invention.

1. In a deep well pumping mechanism, the combination of a pump casing located beneath the surface of the earth, a rotary impeller in said casing, a long power shaft driven from above and extending downward to said impeller, said power shaft being adapted to transmit power to said impeller, a fluid operated bearing located substantially at the top of said power shaft for supporting said shaft and impeller on a fluid surface, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft.

2. In a deep well pumping mechanism, the combination with pump means including pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a long downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperating to support said long shaft, auxiliary bearing means for sustaining any resultant downward thrust on said shaft, said fluid operated bearing and said auxiliary bearing means both being located substantially at the top of said power shaft so that the long shaft depends therefrom and by its own weight tends to draw itself into a substantially straight vertical line, and means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means.

3. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing cooperatively to support said shaft, said fluid operated bearing being located substantially
64 at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft.

The relation of the counts of the interference to the claims of the respective parties is as follows:—

Counts.	Chapman & Chapman.	Wintroath.
1	1	2
2	2	3
3	3	4

Claims 2, 3, and 4 of Wintroath define the same invention as Chapman & Chapman's claims 1, 2, and 3 in substance.

P. D. HASKELL,
Acting Ex'r.

Counts compared.
F. H. B.

39,684—5.

Statement of Wintroath.

Filed Apr. 27, 1916.

Approved May 5, 1916.

W.

In the United States Patent Office.

Patent to John A. Wintroath for Well Mechanism. Issued Nov. 25, 1913. No. 1,079,679. Original Application Filed December 2, 1912. Serial Number 734,649.

To the Commissioner of Patents.

HONORABLE SIR:

In re Interference in the United States Patent Office.

Preliminary Statement of John A. Wintroath.

MATTHEW T. & MARK C. CHAPMAN

vs.

JOHN A. WINTROATH.

STATE OF COLUMBIA,
County of Los Angeles, ss:

John A. Wintroath, of the City of Los Angeles, in the County of Los Angeles, State of California, being first duly sworn [ed].* doth depose and say, that he is a party to the interference declared by the Commissioner of Patents on March 21, 1916, between the pending application for letters patent of Matthew T. and Mark C. Chapman and the patent previously granted to this affiant on November 25, 1913, numbered 1,079,679, for "Well Mechanism";

65

That he conceived the invention contained in the claims of his said patent declared to be involved in this interference, on or about the first day of October 1910; that on or about the second day of January 1912 he first made drawings embodying the said invention; that he never made a written description of the said invention prior to writing the application upon which the said patent was granted; that on or about the second day of January 1912 he first explained the invention to others; that he first embodied his invention in a full sized completed machine on or about the seventeenth day of May 1912 and that on or about the thirtieth day of May 1912, the said

[*Words and figures enclosed in brackets erased in copy.]

machine, namely a Deep Well Turbine Pump, was first successfully operated in the town of San Dimas, County of Los Angeles, State of California;

That [ever]* since the said machine was first successfully operated at San Dimas, California, on May 30, 1912, as stated, this affiant, and his assignees, the Layne & Bowler Corporation, have made and constructed many other machines,—approximately 42 or 43 in number—embodying the affiant's invention, and have successfully operated the same in many parts of the United States, and that the said machines embodying his said invention have been in open, notorious, and continual public use, ever since May 30th, 1912, at San Dimas, California, and many other places. That the machines in which affiant's invention is used, are Deep Well Centrifugal Turbine Pumps, and that such pumps have an extensive application in irrigating arid and semi-arid lands, and in [the]* developing water for Cities, Railroads, and Sugar Factories, and for other industrial and governmental enterprises. That the affiant's invention has made possible a substantial extension in the field of such Deep Well Pumps, and that the cost of each pump embodying this invention is approximately $3,000.00, so that the 40 pumps, more or less, which this affiant, and his assignees, have manufactured, embracing this invention, are valued at approximately $120,000.00, and that the development undertaken by the purchasers and users of these pumps has been materially expedited and encouraged by the application of such Turbine Centrifugal Pumps to their problems, and that such [such]* pumps could not have been so used except for affiant's invention, and that the other machinery previously used is less satisfactory in efficiency, servicibility and dependcibility.

JOHN A. WINTROATH.

Subscribed and sworn to before me this 21 day of April, 1916.

[SEAL.] HANNAH McKERNAN,
Notary Public in and for the County of Los Angeles, State of California.

66 Paper No. 7.

May 5, 1916.

Interference No. 39,684.

WINTROATH

v.

CHAPMAN AND CHAPMAN.

The date of conception of the invention in issue alleged in the preliminary statement of Wintroath, the junior party, being subsequent to the filing date of the senior party, notice is hereby given that judgment on the record will be entered against said junior

[*Words and figures enclosed in brackets erased in copy.]

party unless he shall within thirty days show good and sufficient cause why such action should not be taken.

The dates of filing and serial numbers of the respective applications are as follows:

John A. Wintroath, filed Dec. 2, 1912, No. 734,649, patented Nov. 25, 1913, No. 1,079,679.

Matthew T. and Mark C. Chapman, filed July 6, 1915, No. 38,254, division of No. 482,517, filed March 10, 1909.

H. E. STAUFFER,
Examiner of Interferences.

Mail Room,
Jun- 3, 1916,
U. S. Patent Office.

Docket Clerk,
Jun- 3, 1916,
U. S. Patent Office.

39,684—10.

In the United States Patent Office.

Before the Examiner of Interferences.

Interference #39,684.

WINTROATH

vs.

CHAPMAN et al.

Motion to Shift the Burden of Proof.

Now comes the party Wintroath, by his attorneys, and moves to shift the burden of proof for the following reasons:

1st. That the party Chapman is not entitled to the date of his original application for reduction to practice, because he did not have the invention set forth in the counts nor did he at any time claim the invention until the filing of his divisional application involved in this interference, which application was filed
67 three years after the party Wintroath had actually reduced the invention to practice and placed the same on the market, and a year and a half after the party Wintroath's patent had issued.

2nd. That the party Chapman cannot set up his original application as constituting a constructive reduction to practice of matter shown but not claimed therein, but for the purposes of this motion must be limited to the date of his divisional application here in issue.

3rd. That, as between a mere paper disclosure in which there is no claim to the invention of the counts and a patent issued in regular order according to the rules of practice of the Patent Office, the burden of proof is upon the party seeking to defeat the established prima facie right of the patentee.

And furthermore, the party Wintroath requests a stay of proceedings until determination of this motion and requests that the

Examiner of Interferences decide this motion before transmitting the files and the motion to dissolve to the Law Examiner.

JOHN A. WINTROATH AND
LAYNE & BOWLER CORPORATION,
By SYNNESTVEDT & BRADLEY, *Attorneys.*

In the United States Patent Office.

Before the Examiner of Interferences.

Interference #39,684.

WINTROATH
vs.
CHAPMAN et al.

Affidavit.

STATE OF PENNSYLVANIA,
County of Philadelphia, ss:

Archworth Martin, being duly sworn, deposes and says that he is employed in the office of Synnestvedt, Bradley, Lechner & Fowkes; that on June 2nd, 1916 he sent by registered mail to Messrs. Adams & Jackson, Monadnock Block, Chicago, Ill., Attorneys for Chapman, et al., a copy of the attached Motion to Shift the Burden of Proof.

ARCHWORTH MARTIN.

Subscribed and sworn to before me this 2nd day of June, 1916.
[SEAL.] ELEANOR L. JAQUETTE,
Notary Public, *Notary Public.*

Commission Expires Feb. 21st, 1919.

68 Mail Room,
Jun- 3, 1916,
U. S. Patent Office.

Docket Clerk,
Jun- 3, 1916,
U. S. Patent Office.

39,684—11.

In the United States Patent Office.

Before the Law Examiner.

Interference #39,684.

WINTROATH
vs.
CHAPMAN et al.

Motion to Dissolve.

And now comes the party Wintroath, by his attorneys, and moves to dissolve this interference on the following grounds:

1st. That the party Chapman has no right to make the claims.

2nd. That the counts are not patentable to the party Chapman because he abandoned the invention therein set forth.

3rd. That the counts are unpatentable over the following prior art patents and publications.

#517,529, April 3, 1894, Price.

#669,601, March 12, 1901, Snow.

#611,472, Sept. 25, 1898, Gillespie.

23rd Annual Report of the Board of Water Commissioners of the City of Madison, Wis., for the year 1905, Wisconsin Botschafter Print, Madison, Wisconsin, 1906. (Copies on file at John Crerar Library, Chicago, Ill., and in Division 9 of the Patent Office.

Low & Bevis Manual of Machine Drawing and Design, Edition 1905, pages 129, 130, 131. Published by Longmans, Green & Co., London, Eng., and New York, N. Y.

Price, 517,529.

This patent shows centrifugal pump mechanism for use in deep or shallow well pumps and its comprises a pump casing located beneath the surface of the earth; a rotary impeller means B in the casing, a downwardly extending power shaft C, said shaft being driven from above by a driving impeller means; a fluid operated bearing (parts G. H. Q. etc.) located at the top of the well (see Figure 5 and description thereof on Page 1 and also lines 93 to 102, page 2); and an auxiliary bearing means (parts I) for sustaining any resultant downwardly thrust of the power shaft. In the drawings the parts I are also so arranged as to take upward thrust. The fluid operated bearing piston G is lifted upward by water pressure and the range of movement is determined by the cock L.

69 Snow, 669,601.

This patent shows a fluid operated bearing for centrifugal pumps for deep or shallow wells; said fluid operated bearing being located at the top of the well and serving to support a downwardly extending power shaft 2 which operates the impeller 5 in the well casing 4. Means separate from, and in addition to, the pump are provided for supplying the fluid pressure for operating the fluid bearing and there is a bearing block 10 provided in the bottom of the fluid bearing chamber for sustaining any resultant downward thrust of the power shaft 2. At the top the power shaft 2 is provided with a collar which acts as a bearing for sustaining any resultant upward thrust on the power shaft, and the said collar (not numbered) taking against a boss formed on the under face of the top of the yoke 1. The power shaft 2 in this patent, as well as the power shaft C in the Price patent, may be of such length as to draw itself into a substantially vertical straight line by its own weight.

Thus the Snow patent shows a combination of elements identical with the counts at issue and designed to secure the same operative results.

It would involve no invention to provide the independent means for supplying fluid pressure shown in the Snow patent to the fluid bearing mechanism of the Price patent 517,529.

Gillespie, 611,472.

This patent shows a ball bearing 7 for taking the upward thrust of the shaft 1 and a ball bearing 9 which takes the downward thrust of said shaft, the shaft being utilized to operate a sluice gate. This patent shows that it is old to provide frictionless bearings to take upward and downward thrust in an analogous mechanism and no invention would be involved in substituting these frictionless bearings for the plates I of the Price patent or the block 10 and collar (not numbered) of the Snow patent hereinbefore discussed.

Madison Publication.

The 23rd Annual Report of the Water Department of the City of Madison, Wisconsin, 1905, shows a deep well pump mechanism comprising a casing, a downwardly extending power shaft adapted to operate an impeller located in said casing; a fluid operated bearing at the top of the well adapted to sustain the power shaft; an auxiliary bearing adjacent the top of the power shaft at the point where the same is coupled to the dynamo shaft, to sustain any resultant up thrust of the power shaft; and means independent of the pump mechanism for supplying fluid pressure for operating said fluid bearing. The lower half of the fluid operated bearing acts as a bearing to sustain any resultant downward thrust of the power shaft.

It would involve no invention to substitute ball bearings for the bearings shown in this publication, nor would it involve any invention to substitute the independent means for supplying fluid pressure to the fluid operated bearing shown in this publication to the construction shown in the Price patent.

Manual of Machine Drawing and Design.

This publication by D. A. Low and A. W. Bevis of 1906, on Pages 130 and 131 shows two figures 329 and 330 in which a power shaft A is supported by two cooperating bearings, the upper bearing F is a fluid pressure bearing, oil being supplied thereto under pressure through the pipe H. The lower bearing is a fluid operated bearing at the lower end of the shaft, fluid being supplied thereto under pressure, through a pipe not numbered (see Figure 330). Each bearing normally assists in sustaining the load of the shaft but the upper bearing F sustains any resultant downward thrust.

It is requested that no date for hearing on this motion be set until after a decision has been made by the Examiner of Interferences on the motion to shift the burden of proof.

JOHN A. WINTROATH AND
LAYNE & BOWLER CORPORATION,
By SYNNESTVEDT & BRADLEY, *Attorneys.*

In the United States Patent Office.

Before the Law Examiner.

Interference #39,684.

WINTROATH

vs.

CHAPMAN et al.

Affidavit.

STATE OF PENNSYLVANIA,
County of Philadelphia, ss:

Archworth Martin, being duly sworn, deposes and says that he is employed in the office of Synnestvedt, Bradley, Lechner & Fowkes; that on June 2nd, 1916, he sent by registered mail to Messrs. Adams & Jackson, Monadnock Block, Chicago, Ill., Attorneys for Chapman, et al., a copy of the attached Motion to Dissolve.

ARCHWORTH MARTIN,

Subscribed and sworn to before me this 2nd day of June, 1916.
[SEAL.] ELEANOR L. JAQUETTE,
Notary Public.

Commission Expires Feb. 21st, 1919.

71 Intf. No. 39,684, Paper No. 12.

M. S. D.

In the United States Patent Office.

Patent Interference No. 39,684.

WINTROATH

v.

CHAPMAN and CHAPMAN.

Motion for Dissolution.

Deep Well Pumps.

Order.

Patent granted John A. Wintroath Nov. 25, 1913, No. 1,079,679, on application filed Dec. 2, 1912.

Application of Matthew T. Chapman and Mark C. Chapman filed

July 6, 1915, No. 38,254, division of application filed Mar. 10, 1909.

Messrs. Synnestvedt & Bradley and Mr. Robert A. Steps for Wintroath.

Messrs. Adams & Jackson for Chapman and Chapman.

The motion to dissolve filed by Wintroath will not be set for hearing. The first and second grounds allege that Chapman has no right to make the claims and that he has abandoned the invention, but no specific reasons are stated in support of these grounds. The third ground alleges that the issue is unpatentable, but the party Wintroath, being a patentee, has no right to move to dissolve on that ground (Manson v. Hutchison, 291 O. G., 569).

THOMAS EWING,
Commissioner.

June 6, 1916.

72 Docket Clerk,
Jun- 21, 1916,
U. S. Patent Office.

39,684—18.

In the United States Patent Office.

Before the Examiner of Interferences.

Interference #39,684.

WINTROATH

vs.

CHAPMAN & CHAPMAN.

Motion for Judgment on the Record.

And now comes the party Wintroath and moves that judgment on the record be awarded against the parties Chapman & Chapman, for the reason that Chapman & Chapman are estopped from making the claims, and the facts which raise the estoppel also work an abandonment, and to award the claims to Chapman & Chapman would, under the facts, be against public policy.

The facts out of which the estoppel and abandonment arise are as follows:

The parties Chapman on March 10, 1909, filed an application which they rely on as disclosing the subject matter in issue, but made no claim to the same. Wintroath filed his application on December 2, 1912, and a patent was regularly and lawfully issued to him under the rules of the Patent Office, on November 25, 1913. On July 6, 1915, or a year and 6 months after the issuance of Wintroath's patent, Chapman & Chapman filed a division of their application of

March 10, 1909, and copied from the Wintroath patent the three claims in issue, this being the first time that they ever made any claims corresponding to those in issue, although the original application had been on file for more than six years previous thereto. It is also to be noted that Chapman & Chapman never at any time previous to the filing of the divisional application in interference presented claims to the invention disclosed in the counts.

Under these circumstances Chapman & Chapman must be held to be estopped to make the claims in issue, and to have abandoned any right which they may have once had thereto, and in addition it would be against public policy and the spirit of the patent laws to permit Chapman & Chapman at this date to deprive Wintroath of the fruits of his diligence and thereby permit an unlawful extension of the patent monopoly on the invention. In this connection, Wintroath's preliminary statement shows that he had an actual reduction to practice in May 112, and thereafter apparatus embodying
73 the invention in issue was made and sold by him and his assignee to the value of $120,000.

JOHN A. WINTROATH,
LAYNE & BOWLER CORPORATION,
By SYNNESTVEDT & BRADLEY,
Attorneys.

June 17, 1916.

In the United States Patent Office.

Before the Examiner of Interferences.

Interference 39,684.

WINTROATH

vs.

CHAPMAN et al.

June 17, 1916.

Messrs. Adams & Jackson, Monadnock Building, Chicago, Ill.

GENTLEMEN: Please take notice that on Wednesday, June 21, at 10 A. M. or as soon thereafter as counsel can be heard, we will appear before the Examiner of Interferences and argue our Motion for Judgment on the Record, copy of which is attached hereto.

Respectfully,
SYNNESTVEDT & BRADLEY,
Attorneys for Wintroath.

Service of the above acknowledged this 19th day of June, 1916.
ADAMS & JACKSON,
Attorneys for Chapman.

Paper No. 24.

July 8, 1916.

Before the Examiner of Interferences.

In re Interference No. 39,684.

WINTROATH

v.

CHAPMAN and CHAPMAN.

This case is before me for decision on two motions, (1) a motion to shift the burden of proof, filed June 3, 1916, in behalf of Wintroath, and (2) a motion for judgment, filed June 21, 1916, in behalf of the same party. Both motions are strenuously opposed by counsel representing Chapman and Chapman.

74 *Wintroath's Motion to Shift the Burden of Proof.*

As will be shown in determining the motion for judgment the grounds upon which Wintroath's motion to shift the burden of proof is based would, if sufficient to warrant such action, constitute a satisfactory basis for entering judgment against Chapman and Chapman. The motion to shift the burden of proof will therefore be dismissed without further comment.

Wintroath's Motion for Judgment.

Wintroath's motion for judgment is based upon the ground that Chapman and Chapman are precluded from contesting Wintroath's right to the claims corresponding to the issue of this interference under the equitable doctrine of laches as applied by the Court of Appeals of the District of Columbia in the case of Rountree v. Sloan (227 O. G., 744, not yet reported in App. D. C.).

Wintroath is involved in this interference on a patent granted November 25, 1913, as a result of an application filed December 2, 1912. Chapman and Chapman are directly involved on an application filed July 6, 1915, but in placing the burden of proof they have been given the benefit of a prior application, filed March 10, 1909, of which the application directly involved has been treated as a division.

It is urged in behalf of Wintroath that Chapman and Chapman made claims corresponding to the interference issue for the first time when their divisional application was filed on July 6, 1915, whereas it was their duty, if they thought such claims would read upon the disclosure of their pending application, to make them promptly, at least within the time allowed for amendment after office action. Wintroath contends, relying upon the decision in the case of Rountree v.

Sloan, supra, that the failure of Chapman and Chapman, to make the claims until nearly twenty months after the issue of the Wintroath patent, including such claims, is fatal to any right which they might otherwise have had to contest the question of priority of invention as against Wintroath.

In behalf of Chapman and Chapman it is urged that the ground upon which Wintroath's motion is based has been disposed of by the Commissioner on motion to dissolve and that this tribunal has no jurisdiction. No sufficient basis for this contention is found in the record. Wintroath is under order to show cause why judgment should not be entered against him on the record because of his failure to allege a date of conception prior to the filing date of the Chapman and Chapman parent application. If Chapman and Chapman are entitled to the date of that application as a constructive reduction to practice they should prevail and there would be no occasion for the presentation of evidence in behalf of Wintroath. Wintroath, in support of his motion for judgment, alleges that Chapman and Chapman are not entitled to the benefit of their parent application as a constructive reduction to practice, but have lost all right to a
75 patent for the invention in issue because of their laches in presenting claims after the issue of the Wintroath patent. If this contention is well founded it constitutes sufficient basis for a judgment against Chapman and Chapman which would be final, subject to appeal. The merits of the question thus presented were not ruled upon by the Commissioner in his decision of June 6, 1916, refusing to set Wintroath's motion to dissolve for hearing. The Commissioner's action on that motion was expressly based upon the ground that two of the three grounds upon which the motion to dissolve was based were not set forth with sufficient definiteness and that the third ground was one which could not be determined on such a motion. The ground upon which Wintroath's motion, now under consideration, is founded, is held to constitute a basis for a judgment of priority rather than a dissolution of the interference. The objection that this tribunal is without jurisdiction to determine the question thus submitted is therefore overruled.

Chapman and Chapman have charged Wintroath with inexcusable delay in the presentation of this motion. The motion was filed on June 21, 1916. The decision in the case of Rountree v. Sloan, supra, upon which the motion is based, was first published in the Official Gazette of June 13, 1916. Under the circumstances the objection based upon alleged delay is regarded as of no weight and is overruled.

It is also objected, in behalf of Chapman and Chapman, that a judgment, of the nature of that which is sought by Wintroath, may not properly be entered until an opportunity has been offered for the introduction of evidence. It is a sufficient answer to this objection that the decision in the case of Rountree v. Sloan, supra, was based upon the applications involved and the record dates without consideration of other evidence. The allegations of fact set forth in the preliminary statement of Chapman and Chapman may not be regarded as evidence and if Chapman and Chapman are guilty of

laches in making the claims in issue they must be held to be estopped to present evidence on the question of priority of invention.

In behalf of Chapman and Chapman, it is urged that the decision in the case of Rountree v. Sloan, supra, is not controlling upon the point raised by Wintroath's motion for the alleged reason that claims to the subject matter in issue were presented in the parent application of Chapman and Chapman, prior to the issue of Wintroath's patent. Wintroath concedes that the invention in issue was clearly disclosed in the parent application of Chapman and Chapman as filed, but contends that the invention was not claimed until the divisional application was filed.

The claims of the Chapman and Chapman parent application, relied upon in support of the contention that the invention in issue was claimed therein (See Chapman and Chapman's brief, paper No. 21, pages 11 to 13), have been examined and are found to relate to the same general subject matter of invention as do the claims corresponding to the counts of the interference issue. The invention in controversy in this proceeding relates to a deep well pumping structure involving a fluid bearing in combination with one or more
76 ball bearings. Certain claims of the Chapman and Chapman parent application are broader in scope than the claims corresponding to the interference issue and substantially all of the elements of the interfering claims are severally included in the claims originally presented. It is admitted, however, by counsel for Chapman and Chapman that the claims of the parent application did not include the fluid bearing in combination with the ball bearings (Brief, paper No. 21, page 12).

On reference to the files of the Sloan application, involved in the case of Rountree v. Sloan, supra, it is found that the claims originally presented by Sloan (see claims 3 to 6, originally numbered 4 to 7) more nearly approximated the claims of the interference issue in which Sloan was involved than do the claims of the Chapman and Chapman parent application approximate the interfering claims of this proceeding. In the case of Rountree v. Sloan, supra, the question of laches was first raised before the First Assistant Commissioner and was disposed of by him as follows:

The second point from which Rountree takes an appeal is that Sloan is estopped from making the counts of the issue by reason of a delay of over three years after the issuance of the Rountree patent. Whether or not there would be any ground for this contention, if Sloan had no claims reaching to the subject-matter of this issue before the Rountree patent issued, need not be considered because Sloan has always had claims for the invention. Sloan's original claims 4 to 7 (present claims 3 to 6) cover substantially the same invention as is covered by the present counts. It was therefore an inadvertence to have issued the Rountree patent while these claims of Sloan were reaching to the same invention, and Sloan should not be held estopped from making these counts (See Lotz v. Kenny, 135 O. G., 1801, 31 App. D. C., 205 and Shreeve v. Grissinger, 202 O. G., 951).

Decision of First Assistant Commissioner Newton (Rountree v. Sloan, July 2, 1915).

With respect to this point the Court of Appeals (Rowntree v. Sloan, supra) said:

We have not overlooked his (Sloan's) contention that there were claims in his application as originally filed approximating the claims of the issue. It is enough to say that we are clearly of the opinion that this contention is not justified by the record."

In view of the last mentioned ruling it is held that this case cannot be distinguished from the case of Rowntree v. Sloan, supra, on the alleged ground that the invention in issue was claimed in the parent application of Chapman and Chapman.

In the case of *Ex parte* Fritts, (237 O. G., 737, not yet reported in App. D. C.) the Court of Appeals of the District of Columbia ruled that an applicant is in duty bound, after the issue of a patent to another for an invention to which he claims title, to assert his claims thereto within a reasonable time, to the end that an interference might be declared and the issue of priority determined; and that by failing to assert such claims he must be held to have abandoned them. In that case patents had been issued to parties other than the applicant and had run their whole term of seventeen years. In the case
of Rowntree v. Sloan, supra, the Rowntree patent issued about
77 three years prior to the time when Sloan first made the conflicting claims in his application. The examiner of interferences, as to certain counts of the issue, had awarded priority of invention to Rowntree, on the ground that Sloan had no right to make claims corresponding to such counts in view of his application disclosure. That ruling was affirmed by the Board of Examiners-in-Chief, but was reversed by the First Assistant Commissioner. The Court of Appeals of the District of Columbia, after making a general statement to the effect that, in their opinion, the view of the lower tribunals of the Patent Office was correct, based their decision upon the ground that Sloan's laches in failing, within a reasonable time after the issue of the Rowntree patent, to make the interfering claims, estopped him to make them at all. After referring to the case *In re* Fritts, supra, the court said:

"By his delay, if his present contention should be accepted, the life of the monopoly would be extended for a period of three years. If he thought these claims read upon his application, it was his duty promptly to make them, at least within the time allowed for amendment after Office action, and his failure to do so is fatal to his present contention. We have not overlooked his contention that there were claims in his application as originally filed approximating the claims of the issue. It is enough to say that we are clearly of the opinion that this contention is not justified by the record."

The decision in the case of Rowntree v. Sloan, supra, is regarded as controlling to the effect that, under similar circumstances, a period of three years could not be regarded as a reasonable time. Although the expression of opinion by the court to the effect that in such cases the claims must be filed within the time provided for amendment (one year) was not necessary to the decision rendered and is to that extent, *obiter dictum*. It constitutes a clear statement by a controlling tribunal of a limit to the period which should be regarded,

in a similar case, as a reasonable time. Such a positive expression of opinion by a superior tribunal is highly persuasive in its effect and cannot be disregarded. The present case appears to be on all fours with the case of Rowntree v. Sloan, supra, and cannot be distinguished therefrom merely because the period of laches was one of twenty months rather than three years.

That the claims were finally presented in this instance in a divisional case rather than in the original is believed to be immaterial. The effect is the same. The public has already been subject to a monopoly under the Wintroath patent, for a period of more than two years. Should the interference be declared and finally determined in favor of Chapman and Chapman, the public would be subjected to a monopoly for the full period of seventeen years in addition to the time which has elapsed since the issue of the Wintroath patent and the time which would be consumed in the prosecution of an interference.

Public notice is given of the grant of a patent at the time of its issue. The general public should not be subjected to the burden of a materially extended monopoly because of the failure of an interested party to take advantage of such notice within a reasonable
78 time.

Wintroath's motion to shift the burden of proof is dismissed.

Wintroath's motion for judgment is granted.

Priority of invention of the subject-matter in issue is awarded to John A. Wintroath, the junior party.

Limit of appeal: July 28, 1916.

H. E. STAUFFER,
Examiner of Interferences.

Docket Clerk.
Jul. 24, 1916.
U. S. Patent Office.

$10, C'k, Rec'd Jul- 24, 1916. A. C. C., U. S. Pat. Office.

Intf. No. 39,684, Paper No. 25.

In the United States Patent Office.

Interference No. 39,684.

JOHN A. WINTROATH

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

Subject-matter: Deep Well Pumps.

Appeal.

Hon. Commissioner of Patents.

SIR: We hereby appeal to the Examiners-in-Chief from the decision of the Examiner of Interferences granting Wintroath's motion

for judgment on the record against us and awarding priority of invention of the subject-matter of the issue to Wintroath, the junior party. The following are assigned as reasons of appeal:

(1) The Examiner of Interferences erred in taking jurisdiction of and hearing Wintroath's said motion for judgment.

(2) The Examiner of Interferences erred in granting Wintroath's said motion for judgment.

(3) The Examiner of Interferences erred in awarding priority of invention of the subject-matter of the issue to Wintroath, the junior party.

(4) The Examiner of Interferences erred in not awarding priority of invention of the subject-matter of the issue to Chapman and Chapman, the senior party.

(5) The Examiner of Interferences erred in considering the questions of laches and estoppel on a motion for judgment on the record.

(6) The Examiner of Interferences erred in not holding that the questions of estoppel and laches presented in Wintroath's motion for judgment have no bearing on the question of priority and that he had no jurisdiction to consider them.

79 (7) The Examiner of Interferences erred in not holding that the doctrine of Norling v. Hayes, (1911 C. D., 347, 166 O. G., 1282), is controlling in this case.

(8) The Examiner of Interferences erred in holding that the doctrine announced in Rowntree v. Sloan (227 O. G. 744), although *obiter dictum*, is controlling in this case and required the rendering of judgment of priority in favor of Wintroath.

(9) The Examiner of Interferences erred in holding that the subject-matter of the issue was not claimed in the Chapman and Chapman parent application.

(10) The Examiner of Interferences erred in holding that Chapman and Chapman are estopped from making the claims of the issue.

(11) The Examiner of Interferences erred in rendering judgment of priority against the senior party, Chapman and Chapman, without permitting them to take testimony in support of their right to a patent for the subject-matter of the issue.

(12) The Examiner of Interferences erred in holding that Chapman and Chapman are not entitled to the benefit of their parent application as a constructive reduction to practice.

(13) The Examiner of Interferences erred in awarding judgment of priority to Wintroath without permitting Chapman and Chapman to prove the facts set up in their preliminary statement.

(14) The Examiner of Interferences erred in overruling the objection that the subject-matter of Wintroath's motion for judgment had been previously disposed of by the Law Examiner.

(15) The Examiner of Interferences erred in overruling the objection that Wintroath's motion for judgment was made too late, and in holding that the date of the decision of the Court of Appeals of the District of Columbia in *Rowntree* vs. *Sloan*, *supra*, excused Wintroath's delay.

(16) The Examiner of Interferences erred in holding that the ground of Wintroath's motion for judgment constitutes a basis for judgment of priority.

(17) The Examiner of Interferences erred in assuming the authority and functions of a chancellor in a purely statutory proceeding to determine the single issue of priority.

MATTHEW T. CHAPMAN,
MARK C. CHAPMAN,
By ADAMS & JACKSON,
Their Attorneys.

Chicago, July 22, 1916.

80 Mail Room.
Jul- 24, 1916.
U. S. Patent Office.
$10 Applied.

Docket Clerk.
Jul- 24, 1916.
U. S. Patent Office.

July 22, 1916.

Hon. Commissioner of Patents, Washington, D. C.

SIR: We enclose herewith appeal to the Examiners-in-Chief and assignment of errors in interference No. 39,684, *Wintroath v. Chapman & Chapman*. We also enclose check for $10.00 covering the appeal fee.

In view of the fact that this is the vacation season, we respectfully request that the hearing be put off until some time in the fall.

Respectfully,

ADAMS & JACKSON.

Encs.

Appeal No. 8, Paper No. 32.

Decision.

Hearing Oct. 20, 1916. J. R. S.

Appeal No. 85.

UNITED STATES PATENT OFFICE, Nov. 18, 1916.

Before the Examiners-in-Chief, on Appeal.

In the Matter of the Interference Between the Patent to John A. Wintroath, No. 1,079,679, Granted November 25, 1913, on an Application Filed December 2, 1912, Serial No. 734,649, and the Application of Matthew T. and Mark C. Chapman, Filed July 6, 1915, Serial No. 38,254, which is a Division of Application Filed March 10, 1909, Serial No. 482,517. Interference No. 39,684.

Improvement in Deep Well Pumps.

Messrs. Synnestvedt & Bradley and Mr. Robert A. Steps, attorneys for Wintroath.

Messrs. Adams & Jackson, attorneys for Chapman & Chapman.

The decision below was in favor of the party Wintroath and the senior party, Chapman & Chapman, has appealed from that decision.

The grounds of the appeal are variously stated but the real and substantial question to be determined is whether the failure of Chapman & Chapman to make claims corresponding to the counts of the issue until nearly twenty months after the issue of the Wintroath patent is determinative of the question of priority.

Wintroath's patent was granted on November 25, 1913, 81 upon an application filed December 2, 1912. Chapman & Chapman's application was filed July 6, 1915, as a division of a prior application dated March 10, 1909. Were it not for the delay in making the claims involved in the interference, Chapman & Chapman would be entitled to a priority decision on the record, no testimony having been taken by either party.

The decision of the examiner of interferences was based upon the decision of the Court of Appeals of the District of Columbia in the case of Rowntree vs. Sloan, 227 O. G., 744 (not yet reported in App. D. C.). The brief filed on behalf of Chapman & Chapman is mainly based upon the contention that the Court's decision is not controlling because questions of estoppel, abandonment, and laches were withdrawn from consideration by the Court and were not urged upon the Court as a basis for a reversal of the decision by the Patent Office in favor of Sloan. The contention is that the only question actually before the Court was whether Sloan was entitled to make claims corresponding to the counts of the issue and that, obviously, a decision on any additional grounds, and particularly on grounds not presented to the Court, was pure *obiter dictum* and of no authority.

The brief is full of citations of cases which, it is contended, are in contravention of the ruling of the Court of Appeals in the case of Rowntree vs. Sloan. We have carefully considered all of these cases and find that they are without weight in so far as this tribunal is concerned. The office is consistently following the practice set forth in the Rowntree vs. Sloan case and we do not feel that we are authorized to set aside that practice. This, in our opinion, should only be done by the Court of Appeals.

Reference is made in the brief to a decision of the Commissioner of Patents which, it is contended, has a direct bearing upon the question of priority. We are unable to discover, however, that it has any relevency to that question.

In view of the above we find that John A. Wintroath was the first and original inventor and therefore sustain the decision of the Examiner of Interferences awarding priority of invention to him.

Limit of appeal: December 8, 1916.

T. G. STEWARD,
FRANK C. SKINNER,
S. E. FOUTS,
Examiners-in-Chief.

82 Docket Clerk,
Dec. 6, 1916,
U. S. Patent Office.

$20, C'k, Rec'd Dec. 6, 1916. G. C. C., U. S. Pat. Office.

Intf. No. 39,684, Paper No. 34.

In the United States Patent Office.

Interference No. 39,684.

JOHN A. WINTROATH

v.

CHAPMAN and CHAPMAN.

To the Commissioner of Patents.

SIR: We hereby appeal to you in person from the decision of the Examiners-in-Chief, made November 18, 1916, in the interference between our application for letters patent for improvement in Deep Well Pumps and the letters patent of John A. Wintroath, in which priority of invention was awarded to said John A. Wintroath. The following are assigned as reasons of appeal:

1. The Board was without jurisdiction to hear and determine any question but that of priority of invention, and erred in considering and applying the doctrine of equitable estoppel announced in *Rowntree v. Sloan*, 227 O. G. 744.

2. The Board erred in holding that it was not authorized to set aside the practice adopted in *Rowntree* v. *Sloan*.

3. The decisions in *Norling* v. *Hayes*, 165 O. G. 1282; 37 App. D. C. 169, and *Slingluff* v. *Sweet & Spinasse*, 230 O. G. 659, are binding on the Patent Office tribunals, and the Board erred in disregarding said decisions and awarding priority to Wintroath, the junior party, on grounds which it had no jurisdiction to consider *inter partes*.

4. The Board erred in not awarding priority of invention of the issue to Chapman & Chapman, the senior party.

5. The Board erred in not awarding priority of invention of the issue to Wintroath, the junior party.

6. The Board erred in not reversing the decision of the Examiner of Interferences awarding priority of invention to Wintroath.

Signed at Chicago, in the County of Cook, and State of Illinois, this 4th day of December, 1916.

ADAMS & JACKSON,
Attorneys for Chapman and Chapman.

83 Intf. No. 39,684, Paper No. 39.

Recorded, Vol. 122, P. 183.

Hearing Jan. 10, 1917. S. E. T.

In the United States Patent Office.

Patent Interference No. 39,684.

WINTROATH

v.

CHAPMAN and CHAPMAN.

Appeal from the Examiners-in-Chief.

Deep Well Pumps.

Patent granted John A. Wintroath November 25, 1913, No. 1,079,679, on application filed December 2, 1912.

Application of Matthew T. Chapman and Mark C. Chapman filed July 6, 1915, division of application filed March 10, 1909.

Messrs. Synnestvedt & Bradley and Mr. Robert A. Steps for Wintroath.

Messrs. Adams & Jackson for Chapman and Chapman.

This is an appeal by Chapman and Chapman from a decision of the examiners-in-chief affirming the decision of the examiner of interferences and awarding priority of invention to Wintroath.

This is the first case which has been brought before me since the decision in Rowntree v. Sloan (227 O. G., 744, not yet reported in App. D. C.), wherein the question of loss of right by laches in making claims for a period of less than two years after the grant of a patent is presented without any complication.

It is admitted in the brief on appeal of Chapman and Chapman that no claim to the fluid and ball bearings in combination was inserted in the application until about twenty months after the granting of the patent to Wintroath. Thus, on page 33, it is stated that the original claims were much broader in scope than the claims of the issue; on page 34, that the bearings were each particularly claimed, but not in combination; on page 36, that the original application contained claims dominating the subject matter of the issue, but did not contain claims for the precise combination of the issue.

On the other hand, in the brief for Wintroath there is no contention against Chapman and Chapman excepting delay in making the claims to the invention. On pages 7 and 8, the point is urged that Wintroath had entered the field as an independent inventor and had

spent thousands of dollars in placing the devices on the market, and that Chapman and Chapman had made no claims for more
84 than three years after Wintroath began, or until twenty months after the patent had been regularly issued to him.

Sloan waited three years after the grant of a patent to Rowntree before copying the claims involved in that interference. The court held that Sloan had been guilty of fatal laches and that it was his duty to have made the claims promptly, at the farthest, "within the time allowed for amendment after office action," namely, one year.

To establish a fixed limit of one year after which claims may not be copied from a patent presents two serious difficulties.

In the first place, an applicant who has waited more than one year to amend his application may save his rights by showing to the Commissioner that the delay was unavoidable (Revised Statutes, Section 4894). Moreover, generally speaking, laches is a charge which is rebuttal unless the delay exceeds a period specified by statute. No matter what period be taken it seems clear, therefore, that the right to explain the delay must be granted to the applicant.

In the second place, an inventor after another has patented the invention may wait up to two years before filing his own application therefor (Revised Statutes, Section 4886). Since the making of a claim is a mere incident to the patenting of an invention, a patent could not be denied on any theory of laches in such a case.

No reason is seen why a stricter rule should be laid down to regulate the conduct of an inventor who has already filed his application at the time when a rival patent is granted than would be applied to one who filed after the rival patent was granted.

In the Rowntree-Sloan case the question whether the limit of time should be set at one year or two years was not directly involved and therefore presumably was not considered as fully as it would have been had it been necessary for the disposition of the case.

I am persuaded that on further consideration the Court of Appeals instead of selecting the time allowed for amendment by Section 4894 will follow Section 4886, making the time two years.

The limit of two years would also be supported by analogy with the treatment of reissue cases in Miller v. Brass Company, 104 U. S., 350, Mahn v. Harwood, 112 U. S., 354, and Wollensak v. Reiher, 115 U. S., 101. There is, however, this difference that whereas the rule in reissue cases demands diligence at all times with especially good explanation if the delay exceeds two years, the diligence of one who, having already filed, copies its claims within two years of the granting of a patent, cannot be inquired into without imposing a condition more strict than is imposed by Section 4886 upon one who does not file his application until after the rival patent has been granted.

The rule therefore would set a period of two years as a limit below which delay would not be inquired into, and beyond which it must be satisfactorily accounted for.

Under this rule, the primary examiner should deny the right of an applicant to make a claim taken from a patent where the period of de-

lay exceeds two years, and declare an interference only where a *prima facie* case overcoming the charge of dilatoriness is made out
85 by the applicant. Such a showing would of course be open to attack *inter partes*.

For the reason indicated above, award of priority must be made to Chapman and Chapman.

The decision of the examiners-in-chief is reversed.

THOMAS EWING,
Commissioner.

June 18, 1917.

Docket Clerk,
Jul- 6, 1917.
U. S. Patent Office.

Mail Room,
Jul- 6, 1917,
U. S. Patent Office.

Intf. No. 39,684, Paper No. 41.

In the United States Patent Office.

Before the Commissioner of Patents.

Interference No. 39,684.

JOHN A. WINTROATH

v.

CHAPMAN and CHAPMAN.

Subject-matter: Deep Well Pumps.

And now comes John A. Wintroath, by Synnestvedt & Bradley, his attorneys, and gives notice to the Commissioner of Patents of his appeal to the Court of Appeals of the District of Columbia from the decision of the said commissioner, rendered on June 18, 1917, awarding priority of invention to Chapman and Chapman in the above-entitled case, and assigns as his reasons of appeal the following:

1. The Commissioner erred in awarding priority to Chapman and Chapman.

2. The Commisioner erred in holding that the question of diligence by Chapman and Chapman in making the claims in issue should be decided by analogy to Rev. Stat. sec. 4886 rather than to sec. 4894.

JOHN A. WINTROATH.
By SYNNESTVEDT & BRADLEY,
His Attorneys.

Philadelphia, Pa., July 5th, 1917.

Endorsed on cover: Commissioner of Patents. Patent appeal docket, No. 1132. John A. Wintroath, appellant, vs. Matthew T. Chapman and Mark C. Chapman. Court of Appeals, District of Columbia. Filed Jul- 30, 1917. Henry W. Hodges, clerk.

86-88 *Return to Writ of Certiorari.*

Court of Appeals of the District of Columbia. October Term, 1917.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

(Interference No. 39,684.)

Filed November 2, 1917. Printed November 13, 1917.

89 Court of Appeals of the District of Columbia.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN.

Docket Clerk,
Oct. 27, 1917,
U. S. Patent Office.

THE UNITED STATES OF AMERICA, *ss:*

[Seal Court of Appeals, District of Columbia, 1893.]

The President of the United States of America to the Honorable the Commissioner of Patents, Greeting:

Whereas in a certain cause before the Commissioner of Patents between John A. Wintroath and Matthew T. Chapman and Mark C. Chapman, (Interference No. 39684) Subject-Matter: deep-well pumps, which cause was removed to the Court of Appeals of the District of Columbia by virtue of an appeal, agreeably to the act of Congress in such case made and provided, a diminution of the record and proceedings of said cause has been suggested, to wit:

File wrapper and contents of Patent #1,149,633, issued August 10, 1915, to Chapman and Chapman.

You, therefore, are hereby commanded that, searching the record and proceedings in said cause, you certify what omissions, to the extent above enumerated, you shall find to the said Court of Appeals,

so that you have the same, together with this writ, before the said Court of Appeals forthwith.

Witness the Honorable Constantine J. Smyth, Chief Justice of the said Court of Appeals, the 27th day of October, in the year of our Lord one thousand nine hundred and seventeen.

HENRY W. HODGES,
Clerk of the Court of Appeals of the District of Columbia.

[Endorsed:] Court of Appeals of the District of Columbia. No. 1132, P. A., Oct. Term, 1917. John A. Wintroath, Appellant, vs. Matthew T. Chapman and Mark C. Chapman. Writ of Certiorari.

90 2—390.

United States of America,

Department of the Interior,

United States Patent Office.

To all to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the Records of this Office of a Certain Paper, being Additional Paper,

File wrapper and contents of Patent #1,149,633, issued August 10, 1915, to Chapman and Chapman, Assignors to The American Well Works,

for the diminution of the Record in the matter of Interference Number 39,684, Wintroath vs. Chapman & Chapman, Subject-Matter: Deep Well Pumps.

Furnished in obedience to the Writ of Certiorari of the United States Court of Appeals of the District of Columbia, which Writ is hereto attached and returned herewith.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 2nd day of November, in the year of our Lord one thousand nine hundred and seventeen and of the Independence of the United States of America the one hundred and forty-second.

[Seal Patent Office, United States of America.]

F. W. H. CLAY,
Acting Commissioner of Patents.

91 2—437.

Div. 9.

Number (Series of 1900) 482,517.

1909.

(Ex'r's Book) 23—234.

Patent No. 1,149,633.

Name-: Matthew T. Chapman and Mark C. Chapman, Assors. to The American Well Works, of Aurora, Ill., a Corp. of Illinois,
Of Aurora,
County of ——,
State of Illinois.
Invention: Deep Well Pumps.

Parts of application filed.	Original.	Renewed.
Petition	Mar. 10, 1909	—— —, 190–
Affidavit	" " 190"	—— —, 190–
Specification	" " 190"	—— —, 190–
Drawing 8 Sheets	" " 1909	—— —, 190–
Model or specimen	—— —, 190–	—— —, 190–
First Fee Cash $15.	Mar. 10, 1909	—— —, 190–
" " Cert.	—— —, 190–	—— —, 190–
Appl. filed complete	Mch. 10, 1909	—— —, 190–
Examiner F. M. Tryon, Ex.,	June 26, 1915.	—— —, [190–]*
Countersigned —— ——, For Commissioner.	—— ——, For Commissioner.	—— —, [190–]*
Notice of Allowance 4.	June 30, 1915	—— —, 190–
Final Fee Cash $20	July 12, 1915	—— —, 190–
" " Cert.	—— —, 190–	—— —, 190–
Patented August 10, 1915.		

Associate Attorney —— ——. Attorney [Bond],* Adams, [Pickard]* & Jackson,
2. 1147 Monadnock Bldg.,
Chicago, Ill.

Name: —— ——. Serial No. —.
Patent No. —. Date of Patent —— —, ——.

3. 103/43.
482,517.

[On left margin:] Division of App., No. —, filed —— —, 19—.

[*Words and figures enclosed in brackets erased in copy.]

92 2–327.

$15, c'k, Received Mar. 10, 1909. Y. Chief Clerk, U. S. Patent Office.

Division 9, Paper No. 1,
Mar. 12, 1909,
U. S. Patent Office.

Memorandum of Fee Paid at United States Patent Office.

(Be careful to give correct Serial No.)

—— —, 191–.

Serial No. —.
Inventors:
Matthew T. Chapman.
Mark C. Chapman.
Patent to be issued to —— ——.
Name of invention: Deep Well Pump.
Date of payment: Mch. 8, 1909.
Fee: First.
Date of filing: —.
Date of circular of allowance: —.

BOND, ADAMS, PICKARD & JACKSON,
Solicitors.

Send patent to Bond, Adams, Pickard & Jackson, 1147 Monadnock Building, Chicago.

Mail Room,
Mar. 10, 1909,
U. S. Patent Office.

482,517.

Division 9, Paper No. 1,
Mar. 12, 1909,
U. S. Patent Office.

Petition.

To the Commissioner of Patents:

Your petitioners, Matthew T. Chapman and Mark C. Chapman, residing at Aurora, in the County of Kane and State of Illinois and citizens of the United States, pray that Letters Patent may be granted them for the improvements in Deep Well Pumps set forth in the annexed specification; and they hereby appoint the firm of

Bond, Adams, Pickard and Jackson, (composed of A. H.
93 Adams, C. E. Pickard, and J. L. Jackson,) of the City of Chicago, Illinois, their Attorneys, with power of association, substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the Patent, and to transact all business in the Patent Office connected therewith. Petitioners' Post Office addresses are c/o American Well Works, Aurora, Illinois.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Oath.

STATE OF ILLINOIS,
County of Kane, ss:

Matthew T. Chapman and Mark C. Chapman, the said Petitioners, being duly sworn, depose and say that they are citizen- of the United States and residents of Aurora in the County of Kane, State of Illinois; that they verily believe themselves to be the original, first and joint inventors of the improvements in Deep Well Pumps described and claimed in the annexed specification; that they do not know and do not believe that the same were ever known or used before their invention or discovery thereof; or patented, or described in any printed publication in any country before their invention or discovery thereof, or more than two years prior to this application; or in public use or on sale in the United States for more than two years prior to this application; and that no application for patent for said improvements has been filed by them or their representatives or assigns in any foreign country.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Subscribed and sworn to before me this 6 day of March 1909.
[SEAL.] W. E. KNICKERBOCKER,
Notary Public.

Specification.

To all whom it may concern:

Be it known that we, Matthew T. Chapman and Mark C. Chapman, citizens of the United States, residing at Aurora, in the County of Kane and State of Illinois, have invented certain new and useful improvements in Deep Well Pumps, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to pumps for raising water from deep wells, and has to do more particularly with pumps of the centrifugal type. The object of our invention is to provide a new and improved pump by which a larger amount of water may be pumped in a given time or by a given expenditure of power. To this end, it consists in the

improvements hereinafter described and pointed out in the claims.

In the accompanying drawings,—

Figure 1 is a sectional view, illustrating our improved pump;

Figure 2 is a cross-section on line 2—2 of figure 1, illustrating the means for centering and supporting the shaft bearings;

Figure 3 is a section on line 3—3 of figure 1, illustrating the construction of the lower end portion of the pumping mechanism;

Figure 4 is a view, showing a motor for driving the operating pump;

Figure 5 is an enlarged detail, being a vertical section on line 5—5 of figure 6, illustrating the stationary portion of the water-elevating mechanism;

Figure 6 is a cross-section on line 6—6 of figure 5;

Figure 7 is a plan view of the rotary portion of the water-elevating mechanism;

Figure 8 is a horizontal section on line 8—8 of figure 11;

Figure 9 is a detail, being a partial section on line 9—9 of figure 7;

Figure 10 is an inverted plan view of the part shown in figure 7;

Figure 11 is a vertical section on line 11—11 of figure 7;

Figure 12 is a partial sectional view showing the upper portion of the pump;

Figure 13 is a vertical section showing a modified construction of the coupling devices;

Figure 14 is a horizontal section on line 14—14 of figure 13;

Figure 15 is an enlarged side view of the spider shown in figures 13 and 14;

Figure 16 is a vertical section showing a modification;

Figure 17 is an enlarged vertical section showing still another construction of the coupling devices;

Figure 18 is a cross-section on line 18—18 of figure 17;

Figure 19 is a side view of the form of spider shown in figures 17 and 18;

Figure 20 is an enlarged sectional view of a modified form of impeller
Per E. pump-cylinder and ∧ [water-wheel]*;

Figure 21 is a cross-section on line 21—21 of figure 20;

Figure 22 is a cross-section on line 22—22 of figure 20, looking up; and

Figure 23 is a cross-section on line 23—23 of figure 20, looking down.

Our improved pumping mechanism is in the nature of a centrifugal turbine pump, since one or runners or impellers
" " more ∧ [water-wheels]* in the nature of turbine wheels

[*Words and figures enclosed in brackets erased in copy.]

are employed in connection with fixed inclined blades
runner
" " to force the water up, the [turbine]* blades acting by their rotation to throw the water outward against the stationary inclined blades and thereby compel it to rise
95 through the pump cylinder. Suitable provision is made to
runners
Per E. counteract the downward pressure on the ∧ [turbine wheels]* so that such pressure is neutralized soon after the pump is put in service.
runners
" " The several ∧ [turbine wheels]* are mounted on a common shaft vertically disposed in a suitable cylinder,
mounted
" " its lower end being ∧ [stepped]* in a bearing which centers and guides it. Intermediate guides and bearings are also provided and at the lower end of the shaft there is a water piston which is fitted in a suitable cylinder, to which water is admitted under pressure
runners
" " equal to that of the column of water upon the ∧ [turbine wheels],* the water below said water piston acting in an upward direction so as to substantially neutralize the downward pressure of the water in the pump cylinder, thus causing the shaft to rotate freely. The shaft is rotated by power applied to it near its upper end, either by a belt or by a direct-connected mo-
Insert E'. tor ∧. The upper portion of the pump shaft is en-
E.'
closed by a sleeve or tube so that the water in the well does not reach it, the water being discharged through a suitable outlet which connects with the upper end of the pump cylinder.

Referring to the drawings for a description of the particular embodiments of our invention therein illustrated,—

12 indicates a tube, which, for convenience, will be termed the well-tube as it extends down into the well and forms a conduit for conducting the water raised up to the surface where it is discharged through an elbow or other outlet 13 which, as shown in figures 1 and 12, connects with the upper end of the well-tube 12. It will be understood that the well-tube is made up of any desired number of sections which may be united by plain couplings 14 shown in figure 1, but are best united by our improved couplings hereinafter described.

Referring now more particularly to the construction shown in figures 1 to 11, 15 indicates a base-plate which supports the portions of the mechanism which are above ground, as shown in figure 1. 16 indicates several tubular sections, which will be termed "pump cylinders", since the pumping mechanism operates in them. Any suitable number of pump cylinders may be employed, depending on the depth of the well, the volume of water to be pumped, or the quantity of water to be pumped in a given time. Said sections are

[*Words and figures enclosed in brackets erased in copy.]

alike and are fitted together so that the several units when united serve to make up a sectional pump cylinder. The several sections may be secured together in any suitable way, as by bolts. They are adapted to be lowered into the well, the uppermost cylinder 16 being secured to the end of the well-tube preferably by means of a screw collar 17 which screws upon the lower end of the well-
96 tube 12. 18 indicates a bottom section or cylinder, which is secured to the lowermost cylinder 16 and is provided with a bearing for the lower end of the shaft, as will be hereinafter described.

19 indicates the pump shaft, which is a vertically-disposed shaft mounted centrally in the well-tube and extending from above the ground down to the bottom section 18. Said shaft is preferably solid, but may be tubular, if desired, and is composed of sections united by couplings 20, as shown in figure 1. At its upper end it is provided with a nut 21 preferably secured thereto by a set-screw 22, as shown in figure 1, said nut bearing on a top bearing-plate 23 which rests on bearing-balls 24 which in turn rest on a plate 25 carried by an adjusting-plate 26. Said adjusting-plate 26 screws upon a head 27, which in turn is carried by a framework 28 resting on the base-plate 15. Thus it will be seen that the shaft 19 is suspended upon the balls 24 by means of the nut 21. The latter is preferably provided with a cap 29 which encloses and protects the ball bearings resting on the upper edge of the adjusting-plate 26. By screwing the adjusting-plate 26 up or down, obviously the shaft

to compensate for wear, as hereinafter described.

Per E. 19 may be raised or lowered $\wedge$. In order to lock the adjusting-plate 26 in its different positions, a set-screw 30 is provided, as shown in figure 1, but any other suitable means for the purpose may be employed.

" " The lower end of the shaft 19 is $\wedge$ [stepped]* in a
mounted
supported

" " bearing sleeve 31 carried by radial arms 32 $\wedge$ [carried]* by the bottom section 18, as best shown in figures 1 and 3, said arms being in the lower portion of a cylinder 33, which is provided in said section 18, as shown. The lower portion of said cylinder is tapered downwardly and inwardly toward the center where an opening 34 is provided to permit sand and other similar particles to escape. The upper portion of said cylinder receives a piston 35 which fits it closely and moves vertically therein, said piston being secured upon the lower end of the shaft 19. The function of the piston 35 will be hereinafter set forth. 36 indicates an intermediate bearing for the shaft 19, one or more of which may be provided, said bearing consisting of a babbit-ed sleeve which is supported by radial bolts 37, the outer ends of which are connected with the well-tube, as shown in figures 1 and 2. Said bearing, therefore, centers the shaft 19 in addition to supporting it against lateral strain. 38-39 indicates tubes, which connect with the upper and lower ends,

[*Words and figures enclosed in brackets erased in copy.]

respectively, of the bearing sleeve 36, the tube 38 extending up through the elbow 13 and being provided with a suitable cap 40. The latter tube serves to keep the dirty water—from grinding or cutting the joints or bearings of the shaft 19. A stuffing-box 41 prevents the escape of water where said tube passes through said elbow. The lower end of the tube 39 extends down to the upper end of the cylinder 16, where it is connected with part of the water-
97 elevating mechanism, as hereinafter described. In the drawings we have shown two sleeves 38-39, but a greater number may be employed, if desired, depending on the depth of the well,—it being understood that the shaft 19 is enclosed by said tubes which separate the upper portion thereof from the water in the well-tube 12.

The shaft 19 may be rotated by any suitable mechanism, as, for example, by means of power applied through pulleys 42, as shown in figure 1, or by a motor 43 mounted directly upon the upper end thereof, as shown in figure 4.

The interior construction of the cylinders 16 is best shown in figures 5 and 6, from which it will be seen that each cylinder is really in two parts, the upper part 16^a having a central sleeve 44 suitably babbit-ed and forming a bearing for the pump shaft 19. Said sleeve is provided at its lower end with an outwardly-extending radial flange 45 which terminates a short distance from the inner face of the cylinder section, leaving a narrow annular space 46, shown in figures 5 and 6. Around the outer margin of the flange 45 there is provided a tapered sleeve 47, the smaller diameter of which is at the top, said sleeve being substantially parallel with the inner face of the cylinder section so that an upwardly and inwardly inclined annular channel 48 is provided for the passage of water. In the annular passage 46 between the margin of the flange 45 and the inner surface of the cylinder section are a series of inclined blades 49 which are fixed to the inner face of the cylinder section and are arranged at short intervals, forming inclined passages through which the water rises to the passage 48 when forced violently outward against said blades 49, as hereinafter described.

16^b indicates the lower member of the cylinder 16, which is fitted thereto, as shown in figure 5, and is shaped to provide a vertical passage which is in the shape of an hour-glass, the intermediate portion thereof being contracted, as shown at 50 in figure 5, the upper half of said section forming an inclined bottom 51 for the chamber which contains the blades 49. This tapered bottom cooperates with the turbine wheels, as will hereinafter appear. All the parts of the cylinder 16 are fixed or rigid.

pump runners or impellers

Per E. 52 indicates the ^ [turbine wheels],* which act to throw the water outward against the inclined blades 49 which direct it upward through the pump cylinders and

runners

" " well-tube. Said ^ [wheels],* of which any number may be used, are placed in the cylinders 16, as shown in figure 1, being mounted upon and secured to the

[* Words and figures enclosed in brackets erased in copy.]

pump shaft 19 so as to rotate therewith. This is best secured by making the pump shaft in sections, the ends
98 of adjoining sections being screwed into the hub 53
runner
Per E. of the ∧ [wheel]* 52, as shown in figure 1, so that the hub serves as a coupling to unite the sections of the
runner
" " shaft and at the same time the [turbine]* is prevented from moving longitudinally upon the shaft.
runners
" " Each of the ∧ [turbine wheels],* in the construction shown in figures 1 and 7 to 11, comprises the hub 53 and a series of downwardly-extending spiral blades 54 similar in some respects to the blades of a propeller, said blades being connected intermediately by an annular flange 55 which extends around the wheel a short distance from the upper ends of the blades 54, as shown in figure 11, being intersected by said blades, as illustrated in figure 9. As best shown in figures 1 and 11, the lower edges of the blades 54 are inclined to conform to the inclination of the upper inner face of the member 16^b which serves to confine the water and facilitate the action of the blades 54 upon it; also to direct the water upward against the stationary blades 49 as it is forced outward and upward by the rotation
runner
Per E. of the ∧ [wheel].* The tapered lower face of the member 16^b, as best shown at 56 in figures 1 and 5, directs
runner
" " the upwardly-flowing water toward the ∧ [water wheel]* above it.

The water-elevating mechanism is lowered into the well
runner
" " until the lowermost ∧ [turbine wheel]* at least is sub-
runners
" " merged when, by rotating the shaft 19, the ∧ [turbine wheels]* act to force the water in which they are immersed outward and upward against the stationary blades 49, which, in turn, direct it upward to the space above
runner
" " the ∧ [wheel]* where it is subjected to the action of
runner
" " the next higher ∧ [turbine wheel],* if more than one is
runner
" " used. After passing the uppermost ∧ [turbine wheel]* the water continues to rise until it is discharged through
shaft
Per F. the outlet 13. For the purpose of lubricating the ∧ bear-
" "
[runner]*
" E. ings [of the upper ∧ turbine wheel]* the lower end por-

[*Words and figures enclosed in brackets erased in copy.]

tion of the tube 39 is perforated, as shown at 57 in
99 figure 1, the perforations being protected by a screen 58, or other suitable filtering medium, to prevent sand or other par-
Insert F¹. ticles from entering the tube. ^
F¹.

In order to counteract the downward pressure upon the pump, we provide for admitting water to the cylinder 33 below the piston 35 by providing a conduit 59 in each of the pump cylinders, best shown in figures 1 and 5, said conduit being formed by registering passages in each of the several cylinder sections. The lowermost section 18 is also provided with a passage 60 which communicates with said conduit and with the cylinder 33 so that water is admitted through said conduit to said cylinder. The upper end of the conduit 59 opens into the upper portion of the uppermost cylinder 16 above the
runner
Per E. ^ [water wheel]* therein, as shown at 61 in figures 1 and 5, so that the pressure of the water in the well-tube 12 is communicated from below to the piston 39, thus creating a balance and relieving the shaft 19 with the pumping mechanism supported thereby from downward pressure. By making the bottom of the cylinder 33 conical and providing the outlet 34 particles of sand or other matter carried by the water throught the conduit 59 gravitate to the bottom of the cylinder and may escape through such opening, thereby avoiding danger of grinding which might occur in case of sand getting in between the cylinder 33 and piston
Insert E² 35.^
E².

From the foregoing description it will be seen that our improved pumping mechanism may be advantageously employed to elevate water which cannot be lifted by a suction pump placed at the surface, it being capable of efficient operation for elevating water from depths of hundreds of feet below the surface. By providing two anti-friction bearings such as the ball bearing at the top from which the shaft is suspended and the water-step at the bottom, we provide not only for properly supporting the drive shaft at the commencement of the operation of the pump, but also during its operation. When the pump is first started, there being little water in the well, the weight of the shaft and parts carried thereby is supported from the ball bearing at the top, but as soon as the water being pumped reaches the uppermost cylinder a portion of it passes through conduit 59 to the cylinder 33 and begins to relieve the shaft of downward pressure, the upward pressure thus caused increasing with the height of the water in the well until the downward pressure is neutralized,
Insert E³ as above stated.^
E³.

In figures 13, 14 and 15 we have illustrated one of our improved coupling devices for uniting the several sections of the well-tube or tubes and of the protecting tube or tubes and the devices for centering

[* Words and figures enclosed in brackets erased in copy.]

the pump shaft and the bearings therefor. As best shown in figures 13 and 14, 62 indicates a spider, the outer margin of which fits between the adjacent ends of adjoining sections of the well-tube 12, and is firmly clamped between them by a coupling sleeve 63 which draws the sections of the well-tube together, as shown in figure 13. The spider 62 is provided with a central sleeve 63^a, the upper and lower ends of which are externally screw-threaded to receive the adjacent ends of the tubes 38-39. Thus the sleeve 63^a serves to center the tubes 38-39 and held them properly in position. This is further secured by providing the spider 62 with depending webs 64, as shown in figures 13 and 15. The sleeve 63^a forms a bearing for the pump-shaft 19, which passes through it and is provided with a sleeve 65 which bears in the sleeve 63^a, the latter being provided with a lining 66 of babbit-- metal or other suitable anti-fraction material. The sleeve 65 is fixedly secured to the pump-shaft 19 by a rivet 67, or other suitable means, as shown in figure 13. Thus the wear is taken by the sleeve 65 instead of by the shaft, and the several parts are properly centered and held in position so that they cannot get out of alinement.

In figures 17, 18 and 19 we have shown a modified construction for the same purpose. In the construction therein shown we employ a spider 68 similar in many respects to the spider 62 since it has a central sleeve 69, which is screw-threaded and serves to unite the tubes 38-39 in the manner already described. It also is provided with a babbit-ed bearing 70, in which the pump-shaft 19 bears, and the latter is provided with the sleeve 65 in the same way as shown in figure 13. The spider 68, however, is of greater diameter than the well-tube 12 so that its margin projects beyond the outer surface of the well-tube and is engaged by coupling-rings 71-72 which are screwed, respectively, upon the lower end of the upper section and the upper end of the lower section of the well-tube, as shown in figure 17, and thus bear against the opposite faces of the projecting portion of the spider 18. The two rings 71-72 and the spider are all connected together by bolts 73 which pass through them, as shown in figure 17, thus firmly securing together the sections of the well-tube.

In figure 12 we have shown a modified arrangement of the driving mechanism for operating the pump and the mechanism for supporting and controlling the position of the pump-shaft. In the construction therein shown, 74 indicates a standard having laterally-projecting lugs 75, on which rests a casting 76 which carries certain devices for supporting and lubricating the pump-shaft 19. At the top of said casting 76 is provided a box 77 in which is placed a ball-bearing 78. Above said ball-bearing is a plate or disc 79 which is secured to the upper end of the shaft 19 so that it assists in supporting the weight of the shaft and transmits the same to the ball-bearing 78. 80 indicates a similar ball-bearing in the lower portion of the casting 76 which rests upon a sleeve or plate 81 which is also secured to the shaft 19 and transmits to the ball-bearing 80 the upward thrust of said shaft.

82 indicates an oil-chamber in the lower portion of the casting 76 with
Per A. and communicating by a duct 83 [in]* the interior of the bearing-box 77. 84 indicates a return duct leading from the box 77 to the chamber 82. 85 indicates a wheel or
101 disc secured to the plates 81 in the chamber 82 so that it rotates with the shaft 19 and serves by its rotation to force oil from the chamber 82 up through the duct 83 to the bearing-box 77 thereby lubricating the bearing 78 therein. The oil thus forced up to the box 77 returns through the duct 84 to the chamber 82 and thus is caused to circulate continuously as the pump-shaft 19 rotates. By this arrangement both ball bearings are constantly kept lubricated.

To further assist in supporting the pump-shaft and to regulate the point at which it works, we provide a water-governor comprising

Per E. a piston $_{\wedge}^{86}$ [85]* which is secured to the shaft 19 in any
" " suitable way, as by set-screws 86^a within a chamber 87
" " located a short distance above the outlet-pipe 13. Said
" " piston $_{\wedge}^{86}$ [85]* overlies a water-chamber 88 with which communicates a passage 89 supplied through a pipe 90 with water under pressure. The arrangement is such that water admitted through the pipe 90 presses upward
" " on the piston $_{\wedge}^{86}$ [85]*. Should the pressure of the water admitted increase above the normal the pressure on the
" " piston $_{\wedge}^{86}$ [85]* will raise the pump-shaft, thereby carry-
" " ing $_{\wedge}^{\text{said piston}}$ [it]* out of contact with the walls of the chamber 88 and permitting the water to escape into the chamber 87 through passages 91 and thence escape through an escape-pipe 92, which communicates with said chamber 87, as shown in figure 12. By this construction the pump-shaft rotates on a film of water, which further relieves it from friction and improves its operation.

93 indicates a motor for driving the shaft 19, said motor being mounted on top of the standard 74 and being connected with the shaft 19 by a flexible connection which insures the proper operation of the shaft even though it should get somewhat out of alinement with the motor. As shown in figure 12, 94 indicates the motor-shaft which carries at its lower end a coupling member 95 which engages a corresponding coupling-member 96 carried at the upper end of the pump-shaft 19. The coupling-member 95 carries a series of downwardly-projecting pins 97 which engage teeth 98 carried by the coupling member 96, so that the coupling-members interlock and insure the driving of the pump-shaft by the motor.

99 indicates a pipe which communicates with the tube 38 and is

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[* Words and figures enclosed in brackets erased in copy.]

used to admit water to the tube 38 to wet the shaft bearings and lubricate them before starting the pump.

Per G. In figures ^ [16, and 20 to 23]* we have shown a modified ar-

Per E. rangement of the ^ [runners turbine wheels].* In the construction shown in said figures, 100-101 indicate the upper and lower members of the pump cylinder section, the
102 upper member being provided with inclined blades or vanes 102, which are substantially the same as the blades 49 shown in figure 5. Arranged centrally in the upper section 100 and forming a bearing for the pump-shaft is a sleeve 103 having a lining 104 of babbit-metal, or other suitable material. The sleeve 103 corresponds with the sleeve 44 and is externally screw-threaded to receive the tube 38 or 39, as the case may be. 105 indi-

Per E. cates the ^ [runner water-wheel],* which is in many respects

" " similar to the ^ [runner wheel]* 52, and being provided with blades 106 which direct the water outward and upward against the blades 102, thereby causing it to rise through the cylinder. The wheel 105 is adapted to be secured to the pump-shaft in the manner already described, but the construction shown in figures 16 to 23 differs from the construction shown in the earlier figures principally in that bearings are provided for the

Per E. ^ [runner water-wheel]* above and below the blades 106. As

" " shown in figure 20, the ^ [runner water-wheel]* 105 is provided with an upwardly-projecting annular flange 107 above the blades 106, which has a bearing in the lower end of a conical shell 108 which extends down from the sleeve 103, as shown in figure 20. In like manner, at its lower

" " end the ^ [runner water-wheel]* is provided with a downwardly-

" " projecting flange 109 which has a bearing in an inwardly-projecting portion 110 of the lower member 101 of the pump cylinder, as shown in figure 20. Both the flanges 107 and 109 are provided with grooves 111

" " forming water-packing so as to permit the ^ [runner water-wheel]* to move up and down freely without loss of water. The advantage of this construction is that when pumping hard the twist upon the pump-shaft has a tendency to shorten the shaft, but when the strain is off the shaft is again elongated to its normal length. This lengthening and shortening of the shaft necessarily raises and

" " lowers the several [runners water-wheels]* which are connected

[* Words and figures enclosed in brackets erased in copy.]

with it, and consequently it is necessary to provide for
" " such movement of the ∧ runner [water-wheel].* Also there is
" " more or less tendency for the ∧ runners [water-wheels]* to rise and fall in normal pumping.

103 Per E.

So far as we are aware, we are the first in the art to employ centrifugal turbine mechanism for elevating water in deep wells, and our invention is, therefore, generic in character, and the claims are to be construed accordingly.

[Matter enclosed between rules erased in copy.]

That which we claim as our invention, and desire to secure by Letters Patent, is,—

Sub. A[1].

---

1. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, and means cooperating with said means for directing the water upward.

2. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, and stationary means carried by the cylinder and cooperating with said first-mentioned means for directing the water upward.

3. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, inclined blades carried by the cylinder, and means carried by the shaft for throwing the water in the cylinder outward against said blades.

4. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, inclined blades carried by the cylinder, and a wheel carried by said shaft, said wheel having inclined blades for throwing the water in the cylinder outward against said first mentioned blades.

5. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, stationary inclined blades carried by the cylinder, and means carried by the shaft for throwing the water in the cylinder outward against said blades.

6. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, stationary inclined blades carried by the cylinder, and a wheel carried by said shaft, said wheel having inclined

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[* Words and figures enclosed in brackets erased in copy.]

blades for throwing the water in the cylinder outward against said stationary blades.

7. In a pump, the combination of a pump cylinder, said cylinder having a plurality of series of inclined blades, a rotary shaft extending longitudinally in said cylinder, and a plurality of devices mounted on said shaft and acting to throw the water in said cylinder outward against said inclined blades.

8. In a pump, the combination of a pump cylinder, said cylinder having a plurality of series of stationary inclined blades, a rotary shaft extending longitudinally in said cylinder, and a plural-
101 ity of devices mounted on said shaft and acting to throw the water in said cylinder outward against said inclined blades.

9. In a pump, the combination of a pump cylinder, said cylinder having a plurality of series of inclined blades, a rotary shaft extending longitudinally in said cylinder, and a plurality of wheels mounted on said shaft, said wheels having inclined blades and acting to throw the water in said cylinder outward against said first-mentioned inclined blades.

10. In a pump, the combination of a pump cylinder, said cylinder having a plurality of series of stationary inclined blades, a rotary shaft extending longitudinally in said cylinder, and a plurality of wheels mounted on said shaft, said wheels having inclined blades and acting to throw the water in said cylinder outward against said stationary inclined blades.

11. In a deep-well pump, the combination of a cylinder, a rotary shaft extending longitudinally therein water-elevating means operated by the rotation of said shaft for delivering water from the well, and counterbalance means for relieving said shaft of the pressure of the column of water in the well.

12. In a deep-well pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, water-elevating means operated by the rotation of said shaft for delivering water from the well, and means for applying the pressure of the column of water in the well in an upward direction to the shaft to balance the downward pressure thereupon.

13. In a deep-well pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, water-elevating means operated by the rotation of said shaft for delivering water from the well, a piston connected with the lower end of said shaft, and means for applying the pressure of the water in the well to said piston from below.

14. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, and a bearing at the lower end of said shaft.

15. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, a bearing at the lower end of said shaft, and means for longitudinally adjusting said shaft.

16. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, a piston at the lower end of said shaft and a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the well to said cylinder below the piston therein.

17. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, a piston at the lower end of said shaft, a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the well to said second cylinder, and an opening in the bottom of said second cylinder.

18. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, inclined blades, carried by the cylinder, a wheel carried by said shaft, said wheel having inclined blades for throwing the water in the cylinder outward against said first-mentioned blades, and upper and lower bearings for said wheel.

19. In a pump, the combination of a cylinder, a rotary shaft extending longitudinally therein, inclined blades carried by the cylinder, a wheel carried by said shaft, said wheel having inclined blades for throwing the water in the cylinder outward against said first-mentioned blades, upper and lower bearings for said wheel and grooves in said bearings and adapted to receive water from the well.

20. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, and means for moving the shaft vertically.

21. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, and water-actuated means for moving the shaft vertically.

22. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, a water-piston secured to the upper portion of said shaft, a water-chamber on which said piston is seated, and means for admitting water under pressure to said water-chamber.

23. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, a water-piston secured to the upper portion of said shaft, a water-chamber on which said piston is seated, means for admitting water under pressure to said water-chamber, and a discharge passage communicating with said water-chamber when said piston is lifted from its seat.

24. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, and cooperating ball bearings at the upper end of said shaft for taking the upward and downward end thrust of said shaft.

25. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-
106 mentioned means for directing the water upward, cooperating ball bearings at the upper end of said shaft for taking the upward and downward end thrust of said shaft, and means for automatically lubricating said bearings.

26. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, a bearing for the upper end of said shaft, and means for automatically lubricating said bearing.

27. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, a bearing for the upper end of said shaft, an oil-reservoir, a duct leading from said reservoir to said bearing, and means operated by said shaft for supplying oil from said reservoir to said bearing.

28. In a pump, the combination of a cylinder, a rotary shaft extending therein, means carried by said shaft for forcing the water in the cylinder outward, means cooperating with said first-mentioned means for directing the water upward, a motor, and a flexible coupling connecting said motor directly with said shaft.

29. The combination with a sectional well-tube, a shaft extending thereinto, a centering device fitted between abutting ends of said well-tube sections and having a bearing for said shaft, and means for connecting said well-tube sections together.

30. The combination with a sectional well-tube, a shaft extending thereinto, a centering device fitted between abutting ends of said well-tube sections and having a bearing for said shaft, means connecting said well-tube sections, together, and tubes within said well-tube and surrounding said shaft above and below said centering device, said inner tubes being connected with said centering device.

31. The combination of a sectional well-tube, a centering device having a central sleeve, said centering device being fitted between the adjoining ends of well-tube sections, means connecting the well-tube sections, together, and a pump-shaft extending through said sleeve and having a bearing therein.

32. The combination of a sectional well-tube, a centering device having a central sleeve, said centering device being fitted between the adjoined ends of well-tube sections, means connecting the well-

tube sections together, and a pump-shaft extending through said sleeve and having a bearing therein, said shaft having a sleeve secured thereto and having a bearing in said first-mentioned sleeve.

33. The combination of a sectional well-tube, a coupling sleeve secured upon the ends of said well-tube sections for securing them together, a spider fitted between the adjoining ends of the well-tube sections and having a central sleeve, and a pump-shaft having a bearing in said sleeve.

34. The combination of a sectional well-tube, a coupling sleeve secured upon the ends of said well-tube sections for securing them together, a spider fitted between the adjoining ends of the
107 well-tube sections and having a central sleeve, a pump-shaft having a bearing in said sleeve, and an inner tube within said well-tube sections and screwed upon the ends of said central sleeve around the shaft.

[Matter enclosed between rules erased in copy.]

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Witnesses:
HARRY WILLIAM SPILLER.
B. L. PALMER.

2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 2. J. L. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

F. H.

Department of the Interior,
United States Patent Office,
Washington, May 4, 1909.
Mailed " " "

Chapman & Chapman, care Bond, Adams, Pickard & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a communication from the examiner in charge of your application, for Deep Well Pumps, filed March 10, 1909, Ser. No. 482,517.

E. B. MOORE,
Commissioner of Patents.

This application has been examined.

Lines 19 and 20 of page 14 appear incomplete. In Fig. 20 the

numeral 105 appearing near the top of the Figure should be *103*, and in Fig. 21, 105 should be *103*.

Claims 1, 2, 3, 5, 7, and 8 are rejected upon Ivens, #705,844, July 29, 1902, Pumps, Rotary Single Piston (Cent.).

Claims 4, 6, 9, 10, and 18 are rejected upon Ivens above cited, and Ivens, #682,939, Sept. 17, 1901, Artesian & Oil Wells, Drilling & Boring (Pumps, Rotary Single Piston, Cent.).

Claims 11, 12, and 13 are rejected upon Alvord, #735,691, Aug. 11, 1903, Pumps, Rotary Single Piston (Cent.)., the state-
108 ment in the last three lines of claims 12 and 113 that the pressure of the water in the well is applied to the piston being apparently inaccurate, as the pressure of the water in the pump itself is applied to the piston.

Claims 14 and 15 are rejected upon Park & Ries, #801,474, Oct. 10, 1905, Pumps, Rotary Single Piston (Cent.).

Claims 16, 25, and 26 are rejected upon Alvord and Park & Ries, both cited above. In connection with the last two lines attention is called to the above comment in connection with claims 12 and 13.

Claim 19 is rejected upon the two patents to Ivens above cited, and Alvord #735,692, Aug. 11, 1903, Pumps, Rotary Simgle Piston (Screw).

Claims 20 and 21 are rejected *are rejected* upon Ivenss #705,844 and Alvord #735,691, both cited above.

Claims 22 and 23 are rejected upon Ivens #705,844 above cited, and Moreau, #207,887, Sept. 10, 1878, Pumps, Rotary Single Piston (Cent.), and Stumpf, #783,153, Feb. 21, 1905, Steam Engines, Rotary Impact, Compound (Pumps, Rotary Single Pistton, Cent.).

Claim 24 is rejected upon Ivens #705,844 and Park & Ries, both cited above, and Eisler, #522,518, July 3, 1894, same classs.

There is not considered to be any patentable combinatiion between a centrifugal pump and a lubricating device for the shaafting, and claim 27 is therefore rejected under the Commissioner's decision in *ex parte* McNeil, 100 O. G., 1976. In connection with this claim attention is called to Ivens #705,844, and Park & Ries,, both cited above, and Coffman, #771,231, Oct. 4, 1904, Class 64—ssubclass 56. The lubricating device should be separately claimed.

Claim 28 is rejected upon Ivens #704,844 above cited, and Northam & Nolan, #633,478, Sept. 19, 1899, Electricity, Motive Power, Motors, and Howard, #777,373, Dec. 13, 1904, Water Distribution, Cocks and Faucets, Sliding Gates.

Claims 29, 30, 31, 33 and 34 are rejected upon Ellis, #819,986, May 8, 1906, Pumps, Rotary Single Piston (Cent.).

Claim 32 is rejected upon Ellis above cited, and Lager,, #865,504, Sept. 10, 1907, same class. Attention is called to the member 35 in the device of Lager.

Claim 17 is deemed allowable.

F. M. TRYON, *Ex.*

F. M. HOPKINS, *Ass't Ex.*

109 Mail Room, Apr. 29, 1910, U. S. Patent Office.

Division 9, Apr. 29, 1910, U. S. Patent Office.

Paper No. 3,

Amendment.

A.

United States Patent Office.

Room No. 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pump. Filed March 10, 1909. Serial No. 482,517.

April 27, 1910.

Hon. Commissioner of Patents.

SIR: In response to official letter of May 4, 1909, we hereby amend as follows:

The Examiner is respectfully requested to change the numeral 105 near the top of Fig. 20 to *103*, and also to change the numeral 105 in Fig. 21 to *103*.

Page 14, line 19, erase "in" and insert —*with*—

Erase the claims and insert,—

A¹. 1. In a pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means carried by said shaft for elevating the water in the cylinder, a piston at the lower end of said shaft, and a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the pump to said second cylinder below said piston.

A¹. 2. In a pump, the combination of a well-tube, a rotary shaft extending longitudinally therein, a plurality of pump cylinders communicating respectively with one another and with said well-tube cooperating devices carried by said shaft and said cylinders for forcing the water upward into the well-tube, a piston at the lower end of said shaft, a cylinder in which said piston moves, and means for admitting water from the pump to the latter cylinder.

3. In a pump, the combination of a well-tube, a rotary shaft extending longitudinally therein, a plurality of pump cylinders communicating respectively with one another and with said well-tube, cooperating devices carried by said shaft

and said cylinders for forcing the water upward into the well-tube, a piston at the lower end of said shaft, a cylinder in which said piston moves, means for admitting water from the pump to the latter cylinder, and means at the upper end portion of said shaft for suspending the same.

4. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, a piston at the lower end of said shaft, a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the pump to said second cylinder, and an opening in the bottom of said second cylinder.

Per C.

---

5. In a pump the combination of a well-tube, a rotary shaft extending longitudinally therein, a cylinder communicating with said well tube, pumping mechanism operated by the rotation of said shaft, [and]* oppositely-disposed ball-bearings connected with the upper end portion of the shaft for supporting the same.

Per B.

Insert B'.

B'

[Matter enclosed between rules erased in copy.]

Sub. B².

A¹. 6. In a pump, the combination of a well-tube, a rotary shaft extending longitudinally therein, a cylinder communicating with said well-tube, pumping mechanism operated by the rotation of said shaft, means for supporting said shaft, a motor arranged above the upper end of said shaft, and a flexible connection connecting said motor with the shaft, said flexible connection comprising coacting coupling members connected respectively with said shaft and with said motor and having interlocking devices movably engaging one another.

7. In a pump, the combination of a well-tube, a rotary shaft extending longitudinally therein, a cylinder communicating with said well-tube, pumping mechanism operated by the rotation of said shaft, means for supporting said shaft, a motor arranged above the upper end of said shaft, and a flexible connection connecting said motor with the shaft, said flexible connection comprising coacting coupling members connected respectively with said shaft and with said motor and having interlocking teeth and pins movably engaging each other.

[Matter enclosed between rules erased in copy.]
[*Words and figures enclosed in brackets erased in copy.]

111 Per C.

8. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith and having inwardly-projecting inclined blades, a rotary shaft extending longitudinally in said well-tube and cylinder, a water-wheel connected with said shaft and rotating in said cylinder between said blades, ∧ (inclined) blades carried by said wheel, and bearings for said wheel above and below the latter blades.

Per B.

A'. 5c [9].* In a deep-well pump, the combination of a well-tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well-tube, a plurality of sleeve sections enclosing said shaft, and a coupling device coupling the several sections of the well-tube and said sleeve sections, said coupling device comprising a spider ∧ (upon which said sleeves are screwed) [having a screw-threaded connection with said sleeves],* said spider projecting between the adjacent ends of adjoining sections of the well-tube and [Insert B³.]* [means]* ∧ B³ for securing the sections of the well-tube ∧ (thereto) [at opposite sides of said spider].*

Per D.

Per B.

Per G. 6c [10].* In a deep-well pump the combination of a well-tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well-tube, a plurality of sleeve sections enclosing said shaft, a coupling device coupling the several sections of the well-tube and said sleeve sections, said coupling device comprising a spider having a screw-threaded connection with said sleeves, said spider projecting between the adjacent ends of adjoining sections of the ∧ D' [well-tube, means ∧ [thereto]* for securing the sections of [B³].* the well-tube ∧ at opposite sides of said spider, and]* a bearing carried by said spider for said shaft.

Sub [D'].*

Insert [B³].*

Per B.

Insert [D².]*>

B⁴.>

Insert B⁴.

[Matter enclosed between rules erased in copy.]
[* Words and figures enclosed in brackets erased in copy.]

In view of the foregoing amendment, reconsideration and the allowance of this application are respectfully solicited. The claims have been revised in view of the official action, and as now
112 presented are believed to be clearly distinguished from the references. The references do not show applicants' construction by which the pump shaft is balanced, and as the claims to this feature are now drawn more particularly to such construction, it is believed they will not be objected to.

Claim 4 is former claim 17, which was held to be allowable. Applicants' construction of oppositely-disposed bearings is also novel, and the same is true of their flexible connection between the motor and the pump shaft. The claims for these features also are now more specific, and as they clearly distinguish from the references they are believed to be allowable.

Claim 8 is drawn to applicants' construction of water wheel by which the bearings are provided at opposite sides of the blades, which construction is not shown in the references.

Claims 9 and 10 are drawn to applicants' spider for uniting the sections of the well-tube and also the sleeves which enclose the pump shaft, and as the references do not show this feature favorable action as to these claims is requested.

The specification has been amended to avoid the formal criticisms.

Applicants reserve the right to file a separate application for the lubricating mechanism.

Reconsideration and the allowance of the application are respectfully solicited.

Respectfully,

BOND, ADAMS, PICKARD & JACKSON,
Attys. for Applicants.

2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 4. G. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior.
United States Patent Office,
Washington, June 4, 1910.
Mailed " " "

Chapman & Chapman, care Bond, Adams, Packard & Jackson, Chicago, Ill. (Monadnock Bldg.):

Please find below a communication from the Examiner in charge of your application for Deep Well Pumps, filed Mar. 10, 1909, Ser. No. 482,517.

E. B. MOORE,
Commissioner of Patents.

113 This application has been considered as amended Apr. 29, 1910.

Claim 5 is rejected on Northam, #633,475, Sept. 19, 1899, Pumps, Rot. Sing. Piston, (Screw), in view of either Robion, #778,148, Dec. 20, 1904, (121-Motors, Vehicles), or Fig. 7 of Gillespie, #611,472, Sept. 27, 1898, (64-49).

Claims 6 and 7 are rejected on Wilken, #776,711, Dec. 6, 1904, 103-Rot. Sing. P. (Sc.), and Sprague, #385,211, June 26, 1888, (172, 36) Xref. in Rot. Cent. Box, in view of Sperry, #562,500, June 23, 1896, (64-13), Box Op. Dev.

Claim 8 is rejected on Ivens, #705,844, of record in view of either Park & Ries of record, or Ward, #776,573, Dec. 6, 1904, 103-R. S. P. (S).

Claims 9 and 10 are rejected on Owen, #916,583, Mar. 30, 1909, R. S. P. (C), and Matin, #433,990, Aug. 12, 1890, 103-Oper. Dev., in view of the adjusting spider shown in Watson, #140,977, (64-25) July 15, 1873, and Carey, #322,898, July 28, 1885, (64-8) Op. Dev. Box.

Claims 1 to 4 may be allowed as at present advised.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
Sep. 30, 1910,
U. S. Patent Office.

Division 9, Paper No. 5,
Oct. 1, 1910,
U. S. Patent Office.

United States Patent Office.

Room No. 142.

Hon. Commissioner of Patents:

SIR: In the matter of the application of Matthew T. Chapman and Mark C. Chapman, Serial No. 482,517, filed March 10, 1909, for Improvements in Deep Well Pumps, in which a Power of Attorney has been given by said applicants to Bond, Adams, Pickard and Jackson (a firm composed of A. H. Adams, C. E. Pickard and J. L. Jackson) of the City of Chicago, Illinois, each of the undersigned members of said firm hereby enters his appearance as attorney for said applicants.

A. H. ADAMS.
C. E. PICKARD.
J. L. JACKSON.

114 Mail Room,
Apr. 24, 1911,
U. S. Patent Office.

Division 9, Paper No. 6,
Apr. 25, 1911,
U. S. Patent Office.

Amendment.

B.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pump, Filed March 10, 1909, Serial No. 482,517.

April 21, 1911.

Hon. Commissioner of Patents.

SIR: In response to official letter of June 4, 1910, we hereby amend as follows:

√Claim 5, line 4, erase "and"

√at the end of the claim insert

Per C.

B¹. *—a lubricant receptacle below the lower ball-bearing, and means for supplying lubricant from said receptacle to said ball-bearings—*

[Matter enclosed between rules erased in copy.]

√Erase claims 6 and 7 and insert,—

Per C.

B². 6. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith and having inwardly-projecting inclined blades, a rotary shaft extending longitudinally in said well-tube and cylinder, a tube surrounding said shaft, a water-wheel connected with said shaft and rotating in said cylinder between said blades, blades carried by said wheel, and bearings for said wheel above and below the latter blades.

B². 7. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith and having inwardly-projecting inclined blades, a tapered sleeve within said cylinder and forming therewith an upwardly and inwardly inclined annular channel, a rotary shaft extending longitudi-

nally in said well-tube and cylinder, a water-wheel
115 connected with said shaft and rotating in said cylinder between said blades, and blades carried by said wheel.

[Matter enclosed between rules erased in copy.]

√Claim 8, line 6, before "blades" (second occurrence) insert —*inclined*—

√Claims √9 and √10, line 9, erase "means" and insert

Sub. D¹ in cl. 10, B² in cl. 9, per G.

—*coupling-rings outside of the well-tube and secured to the spider at opposite sides of the projecting portion thereof*—

[Matter enclosed between rules erased in copy.]

" " " " √line 10, erase "at opposite sides of said spider" and insert —*thereto*—

Insert the following claim,—

B⁴. 5. *g.* [7ᶜ, 11, 8*d*.]* In a pump, the combination of a well-
sectional
Per D. tube, a ∧ cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, a sleeve in said well-tube surrounding said shaft, means carried by said shaft for elevating the water in the
shaft
Per C. cylinder, a bearing for the lower end of said ∧
formed integral with the cylinder sections and
Per D. [cylinder],* and a duct ∧ [in said cylinder]* extending from above said water-elevating means to said bearing.

E⁴.> Insert E⁴.

In view of the foregoing amendment, reconsideration and the allowance of this application are respectfully solicited. Claim 5 has been amended to include the element of means for supplying lubricant to the bearings, and as this feature appears to be novel with applicants it is believed the claim will now be found to be allowable. New claim 6 includes the sectional sleeve surrounding the pump-shaft in combination with the well-tube and the cylinder and water-elevating devices. Claim 7 includes applicants' guides which cooperate with the cylinder to form the inclined water passages, and claim 8 has been amended to include the inclined blades carried by the

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[*Words and figures enclosed in brackets erased in copy.]

water-wheel, and these claims are therefore believed to be clear of the prior art and to be for allowable subject-matter. Claim 9 has been amended to specify applicants' construction of coupling rings cooperating with the spider, and so also has claim 10. This con-
116 struction is not shown in the references. New claim 11 is in general similar to claim 1, but includes the sleeve which encloses the pump-shaft and the duct leading to the lower bearing. The application is now believed to be in condition for *allowable*, and favorable action is accordingly respectfully solicited.

Respectfully,

BOND, ADAMS, PICKARD & JACKSON,
Attys. for Applicants.

2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 7. G. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior,

United States Patent Office,

Washington, May 11, 1911.
Mailed " " "

Chapman and Chapman, care Bond, Adams, Pickard & Jackson, Monadnock Bldg., Chicago, Ill.:

Please find below a communication from the examiner in charge of your application for Deep Well Pumps, filed Mar. 10, 1909, Ser. No. 482,517.

E. B. MOORE,
Commissioner of Patents.

This application has been considered as amended Apr. 24, 1911.

Claim 5 is specific to Fig. 12, while the remaining claims in the case read only on Fig. 1, or Figs. 1 and 16 and division is therefore required.

Claim 5 is examinable in Div. 12, under the class of Lubricators, and no action is attempted on the merits of the claim, attention being called to Northam, Robion, Coffman and Gillespie, all of record, as showing the state of the art within the knowledge of the examiner.

Claims 6, 7 and 8 are rejected on Alvord, Park & Reis and Ward, all of record.

Claims 9 and 10 state nothing requiring invention over Owen, Martin, Ellis, Watson and Carey all of record, and are re-
117 jected thereon, attention further being called to Ruff & Irwin, #789,629, May 9, 1905, Pumps, Sol. Recip. Piston, in connection with these claims.

In lines 5 and 6 of claim 11, the words "a bearing for the lower end of said cylinder" are apparently inaccurate and should be revised. The claim is considered as directed to patentable subject matter.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
Apr. 10, 1912.
U. S. Patent Office.

Division 9,
Apr. 10, 1912,
U. S. Patent Office.

Paper No. 8.

Amendment.

C.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pump, Filed March 10, 1909, Serial No. 482,517.

April 8, 1912.

Hon. Commissioner of Patents.

SIR: In response to official letter of May 11, 1911, we hereby amend as follows:

Erase claims 5, 6, 7 and 8.

Claim 11, line 6, erase "cylinder" (first occurrence) and insert —*shaft*—

Change the numbers of the claims accordingly.

In view of the foregoing amendent, reconsideration and the allowance of this application are respectfully solicited. Claim 5 is withdrawn in deference to the requirement of division, applicants reserving the right to file a separate application for the subject-matter of said claim.

With regard to claims 9 and 10, attention is called to the fact that they are for a specific arrangement of coupling devices as shown in Fig. 17, in which the spider projects between the adjacent ends

of adjoining sections of the well-tube and couplings are secured to such projecting portions. This is not shown in the references. Probably the nearest of the references cited is patent to Martin, which shows a spider the outer margin of which is flush with the surfaces of the adjoining sections of the well-tube and a sleeve is screwed upon the well-tube and the spider. This, however, is not the same thing as applicants' construction, in which the spider projects out
118 beyond the outer surfaces of the well-tube sections and has the coupling rings secured to it and to the well-tube sections. It is believed these claims should be allowed on reconsideration.

The allowance of the application is respectfully solicited.

Respectfully,

BOND, ADAMS, PICKARD & JACKSON,
Attys. for Applicants.

2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 9. J. L. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior,

United States Patent Office,

Washington, May 10, 1912.
Mailed " " "

Chapman & Chapman, care Bond, Adams, Pickard & Jackson, Monadnock Block, Chicago, Ill:

Please find below a communication from the examiner in charge of your application for Deep Well Pumps, filed March 10, 1909, Ser. No. 482,517.

E. B. MOORE
Commissioner of Patents.

This application has been considered as amended April 10, 1912.

Claims 5 and 6 are rejected on the coupling members 10 and 12 shown in Ellis, of record, and the bearing plate *d* and flanged sections *n* shown in Wiesenbach, #669,209, Mar. 5, 1901, Machine Elements, Cranks and Wrist Pins (Pumps, Elements, Operating Devices).

Claim 7 is rejected on the lubricating connections 26 and 30 shown in Eisler, of record, and the connection 21 shown in Rateau, #742,-231, Oct. 27, 1903, Pumps, Rotary Single Piston (Cent.), on the ground that it did not require invention to place the conduits 26 of Eisler or 21 of Rateau in the pump casing. An encased shaft is shown in Ellis, of record.

F. M. TRYON, *Ex.*

F. W. B.

119 Mail Room,
Jul. 13, 1912,
U. S. Patent Office.

Division 9,
Jul. 15, 1912.
U. S. Patent Office.

Paper No. 10.

Power of Attorney.

United States Patent Office.

Div. No. 9, Room No. 142.

In the Matter of the Application of Matthew T. Chapman & Mark C. Chapman for Letters Patent for Improvements in Deep Well Pumps. Filed March 10, 1909. Serial No. 482,517.

The undersigned having heretofore appointed the firm of Bond, Adams, Pickard & Jackson (composed of A. H. Adams, C. E. Pickard and J. L. Jackson) of the City of Chicago, Illinois, our Attorneys in the matter of the above entitled application, and said Power of Attorney having lapsed by the death on the 24th day of June, 1912, of the said C. E. Pickard,—

Now Therefore, the undersigned hereby appoints as our Attorneys in the matter of said application A. H. Adams and J. L. Jackson, of the City of Chicago, Illinois, (doing business under the firm name and style of Adams & Jackson, Reg. No. 89), with power of association, substitution and revocation, to prosecute said application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

July 6, 1912.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Mail Room,
Apr. 30, 1913,
U. S. Patent Office.

Division 9, Paper No. 11,
May —, 1913,
U. S. Patent Office.

Amendment.

D.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pumps. Filed March 10, 1909. Ser. No. 482,517.

April 28, 1913.

Hon. Commissioner of Patents.

SIR: In response to Office letter of May 10, 1912, we hereby amend as follows:—

120 Claim 5, lines 6 and 7, cancel "having a screw-threaded *connected* with said sleeves," and insert *—upon which said sleeves are screwed—*

Claim 6, lines 9 and 10, cancel "well-tube, coupling-rings outside of the well-tube and secured to the spider at opposite sides of the projecting portion thereof for securing the sections of the well-tube thereto and" and insert—

Per G.

---

17. *well-tube, coupling-rings screwed upon the outside of the sections of well-tube respectively, means for securing said coupling-rings to the annular projecting portion of said spider, and—*

[Matter enclosed between rules erased in copy.]

Insert the following claim:

Per G.

D². 7. In a deep well pump the combination of a well-tube composed of a plurality of sections, a rotary shaft extending longitudinally of said well-tube, a plurality of sleeve sections enclosing said shaft, and a coupling device coupling the several sections of the well-tube and said sleeve sections, said

D². coupling devices comprising a spider having a tapered centering seat upon one of said sections of well-tube, said sleeves being screwed upon said spider, said spider projecting between the adjacent ends of adjoining sections of the well-tube, coupling rings screwed upon the outside of the sections of well-tube respectively, and means for securing said coupling rings to the annular projecting protion of said spider.

[Matter enclosed between rules erased in copy.]

Claim 7, line 2, before "cylinder" insert —*sectional*—

Claim 7, line 6, erase "in said cylinder" and insert —*formed integral with the cylinder sections and*—

Change the number of claim 7 to 8.

In view of the foregoing amendments reconsideration and an allowance of this application are respectfully requested. Former claim 5 has been amended to call for the sleeves which enclose the shaft being screwed upon the spider. Former claim 6 has been

121 amended to call for the particular form of coupling-ring shown and described. New claim 7 is drawn along the line of claims 5 and 6, but limited to the form of spider shown, including the tapered wings which hold the spider centered relative to the lower section of well tube. It is submitted that these claims are now free of the references in terms as well as in substance.

Claim 7 has been amended to differentiate it from the references, which do not show the sectional cylinder with the duct formed integral therewith.

Favorable action is respectfully requested.

Respectfully,

ADAMS & JACKSON,
Att'ys for Applicants.

2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

Paper No. 12. J. L. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior,

United States Patent Office,

Washington, May 29, 1913.
Mailed " " "

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a communication from the Examiner in charge of the application of Chapman & Chapman for Deep Well Pumps, filed Mar. 10, 1909, Ser. No. 482,517.

E. B. MOORE,
Commissioner of Patents.

This application has been considered as amended Apr. 30, 1913.

Claims 5, 6, and 7 are rejected on Ellis and Wiesenbach, both of record, and Bowers, #442,947, Dec. 16, 1890, Class 137-28. The substantial equivalent of applicant's combined coupling, shaft bearing, and guide vane member is shown in Ellis, while in Wiesenbach is shown a flanged connection having a diaphragm member extending between the flanges, and applicants' pipe coupling members 71 and 72 are old and well known in the art, as shown in Bowers.

122 Pipe connections are commonly made with a tapered thread, and to taper the hub of applicants' spider, it is held, is within the range of mechanical skill and did not require invention.

Claim 8 may be allowed as at present advised.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
May 18, 1914,
U. S. Patent Office.

Division 9, Paper No. 13,
May 18, 1914,
U. S. Patent Office.

Amendment.

E.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pump. Filed March 10, 1909. Serial No. 482,517.

May 15, 1914.

Hon. Commissioner of Patents.

SIR: In response to official letter of May 29, 1913, we hereby amend as follows:

Page 3, line 12, erase "water-wheel" and insert —*impeller*—
line 20 erase "water-wheels" and insert —*runners or impellers*—
line 22, erase "turbine" and insert *runner*—
Page 4, lines 2 and 3, erase "turbine wheels" and insert —*runners*—
line 5, erase "turbine wheels" and insert —*runners*—
line 7, erase "stepped" and insert —*mounted*—
line 12 erase "turbine wheels" and insert —*runners*—
line 17, after "motor" insert

E'. —*and is vertically adjustable to compensate for wear, as hereinafter described*—

Page 6, line 18, after "lowered" insert —*to compensate for wear, as hereinafter described*—
123 line 22 erase "stepped" and insert —*mounted*—
line 23, erase "carried" and insert —*supported*—
Page 9, line 7, erase "turbine wheels" and insert —*pump runners or impellers*—
line 10, erase "wheels" and insert —*runners*—

line 15, erase "wheel" and insert —*runner*—
line 17, erase "turbine" and insert —*runner*—
line 19, erase "turbine wheels" and insert —*runners*—
Page 10, line 6, erase "wheel" and insert —*runner*—
line 8, erase "water wheel" and insert —*runner*—
line 10, erase "turbine wheel" and insert —*runner*—
line 11, erase "turbine wheels" and insert —*runners*—
line 14, erase "wheel" and insert —*runner*—
lines 15, 16, and 19, erase "turbine wheel" and insert —*runner*
Page 11, line 8, erase "water wheel" and insert —*runner*.
Page 11, line 19, after "the piston 35" insert—

E². *The cylinder 33 and piston 35 also enclose and protect the lower bearing 31.*—

Page 12, line 11, after "stated" insert—

E³. In the operation of pumps of this character there is considerable wear between the runners and the coacting stationary portions of the cylinders in which they are mounted, and to maintain the efficiency of the pump, it is necessary to
E³. compensate for this wear. In our improved pumping apparatus this is accomplished by means of the adjusting plate or nut 26 which screws upon the head 27. By adjusting this nut, the pump-shaft 19 may be adjusted vertically so as to maintain the runners in the most effective relation to the cylinders in which they operate. The bearing 31 at the lower end of the pump-shaft permits of this adjustment and also prolongs the life of the pump by properly holding the lower end of the pump-shaft in position and there-
124 by preventing lateral displacement of the pump runners while in operation.

Page 15, lines 7, 10, 14, 15, erase "85" and insert —*86*
line 8, erase "86" and insert —*86ª*—
line 16, cancel "it" and insert —*said piston*

Page 16, line 14, erase "turbine wheels" and insert —*runners*—

Page 16, line 24, erase "water wheel" and insert —*runner*—

line 25, erase "wheel" and insert —*runner*—

Page 17, lines 6, 7, 11-12, 17, 24-25, erase "water wheel" and insert —*runner*—

lines 23, and 25-26, erase "water wheels" and insert —*runners*—

Erase the matter on page 18.

Insert the following claims:

E⁴. Per H. 6ᵍ [9].* In a vertical pump of the type described, the combination with a pump-shaft and one or more runners carried thereby, of a bearing for the pump-shaft below the lowermost runner, and means for vertically adjusting the pump-shaft.

Insert g^2.>

[Matter enclosed between rules erased in copy.]

Per G.

E⁴. 10. In a vertical pump of the type described, the combination with a pump-shaft and one or more runners carried thereby of a bearing for the pump-shaft below the lowermost runner, and a screw-adjustment for moving the pump-shaft vertically.

11. In a vertical pump of the type described, the combination of a pump-shaft and one or more runners mounted thereon, means adjustable suspending the shaft from above, and a bearing for the lower end portion of the shaft below the lowermost runner carried thereby.

125 12. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, and a bearing for centering the lower end portion of the pump-shaft, said bearing being in the water-supply passage of the pump.

13. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner, said bearing being located in the water-supply passage of the

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[* Words and figures enclosed in brackets erased in copy.]

pump, and radial arms connected with the bearing for holding the same centrally in the water-passage.

14. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for centering the lower end portion of the pump-shaft, said bearing being in the water-supply passage of the pump, and means for vertically adjusting the pump-shaft to compensate for wear.

15. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing below the lowermost runner for centering the lower end portion of the pump-shaft, a bearing above the uppermost runner, and a tube surrounding the pump-shaft above the uppermost runner for preventing substances carried by the water from coming in contact with the latter bearing.

16. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing below the lowermost runner for centering the lower end portion of the pump-shaft, a bearing above the uppermost runner, a tube surrounding the pump-shaft above the uppermost runner for preventing substances carried by the water from coming in contact with the latter bearing, and means for vertically adjusting the pump-shaft to compensate for wear.

E[4]. 17. In a pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner for centering the shaft, and means protecting said bearing.

18. In a pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner for centering the shaft, means protecting said bearing, and means for vertically adjusting the pump-shaft.

[Matter enclosed between rules erased in copy.]

6[h] [10[g], 19].* In a pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner for centering the shaft, and means substantially enclosing said bearing for protecting the same.

126 Per G.

---

20. In a pump of the type described, the combination of a pump-shaft, a plurality of runners mounted thereon, cylinders in which said runners operate, and adjustable means for raising or lowering the pump-shaft and runners to adjust the runners in their respective cylinders.

[Matter enclosed between rules erased in copy.]
[*Words and figures enclosed in brackets erased in copy.]

F⁴. 7ʰ [11ᵍ, 21].* In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner, and means enclosing and protecting said bearing, said protecting means having an opening at the bottom for the escape of sand.

8ʰ [12ᵍ, 22].* In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing above the uppermost runner, a tube surrounding the pump-shaft above the uppermost runner, said tube having one or more perforations to admit water to said upper bearing, and means for straining the water passing through said perforation or perforations.

Per G.

---

23. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, said pump-shaft being adjustable vertically, a water-pressure-operated governor at the upper end portion of said pump-shaft for supporting and adjusting the same, and a bearing at the lower end portion of said pump-shaft.

Insert F²>

F².

[Matter enclosed between rules erased in copy.]

In view of the foregoing amendment, reconsideration and the allowance of this application are respectfully solicited. A number of corrections have been made to the specification to avoid some informalities and to point out more fully the function of some of the parts.

With regard to claims 5, 6 and 7, it is respectfully submitted that they are not met by the references and should be allowed. Claim 5 calls for a coupling device comprising a spider upon which the sleeves are screwed. The Ellis patent cited against this feature does not show this construction, since the Ellis device does not provide for screwing the sleeves upon the hub portion of the spider, but
127 screws them to collars which are themselves screwed to the spider. Thus the Ellis connection is not a direct one between the sleeves and the spider, but is made through two intermediate collars. A comparison of applicants' Fig. 17 with the construction shown in the Ellis patent will clearly show the difference. Again, the claim calls for the spider projecting between the adjacent ends of adjoining sections of the well-tube and coupling rings outside of the well-tube and secured to the spider at opposite sides of the projecting portions thereof. This is not true of the Ellis construction. In the latter the coupling of the outer tube 1 is effected altogether by the thimble 12,

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[* Words and figures enclosed in brackets erased in copy.]

and the spider has nothing whatever to do with it, since the spider does not project beyond the outer surface of the tube 1, but terminates between the abutting ends of the tube sections. In applicants' construction the spider projects through, and to a considerable distance beyond, the outer surfaces of the well-tube sections, and the coupling rings are bolted to the ends of the spider and are screwed to the well-tube sections. It is respectfully submitted that there is very little similarity between the construction of this claim and what is shown in the Ellis patent. The Weisenbach patent is cited as showing a flanged connection having a diaphragm member extending between the flanges. This is not claimed broadly by applicants, and it is difficult to see what bearing this reference has on the claim. The Bowers patent cited shows merely coupling rings connected by bolts, but applicants do not claim this broadly but only in connection with the spider arranged as specifically recited in the claim. The same remarks apply to claims 6 and 7, which are also specific, claim 7 being even more specific in that it recites the spider having a tapered centering seat. It is respectfully submitted that these claims should all receive favorable consideration.

Upon a further study of the case, applicants believe they are entitled to the additional claims herewith presented, which have been drawn after careful consideration of the references cited and are believed to be clearly distinguished from the prior art.

The allowance of the application is accordingly respectfully solicited.

Respectfully,

ADAMS & JACKSON.
Att'ys for Applicants.

128 Mail Room.
May 25, 1914.
U. S. Patent Office.

Division 9,
May 26, 1914.
U. S. Patent Office.

Paper No. 14.

Supplemental Amendment.

F.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pump. Filed March 10, 1909. Serial No. 482,517.

May 23, 1914.

Hon. Commissioner of Patents.

SIR: We hereby amend as follows:

Page 10, line 18, before "bearings" insert —*shaft*—

line 19, erase "of the upper runner"

line 23, after "tube." insert

F.[1] —When the pump is in operation, water from the discharge passage enters tube 39 through the screen and lubricates the shaft bearings above the perforations as well as below them, since the pressure in said tube is the same as that in the well-tube 12. When the pump is not in operation, the water settles back and flows out through the perforations in the tube 39 and through the screen 58, thereby cleansing the screen of any matter accumulated on it. Inasmuch as the perforations 57 and the screen 58 are practically at the lower end of the
F[1] tube 39, when the pump is stopped all the water in said tube passes out.—

Insert G[1]. G[1].

Insert the following claims:

Per G.

F[2]. 24. In a deep well pumping mechanism, the combination of a downwardly-extending power-shaft, pumping means carried thereby, said shaft being driven from above, and a fluid-operated bearing located near the top of said shaft, said shaft being suspended from said bearing.

25. In a deep well pumping mechanism, the combination of a downwardly-extending power shaft, pumping
129 means carried thereby, said shaft being driven from above, a fluid-operated bearing located near the top of said shaft, said shaft being suspended from said bearing, and means for supplying fluid under pressure to said bearing.

26. The combination with a well-casing, of a rotary pump located therein below the surface of the earth, said pump comprising a power-shaft driven from the top, and a liquid-operated bearing located at the surface, said bearing supporting the weight of said shaft.

[Matter enclosed between rules erased in copy.]

9^h [13^g, 27].* In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means for straining the water passing through said perforation or perforations.

F². 10^h [14^g, 28].* In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means for straining the water passing through said perforation or perforations, said straining means being in said water-discharge passage.

11^h [15^g, 29].* In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means adjacent to the lower end of said tube for straining the water passing through said perforation or perforations.

Insert G^3.>

Upon further consideration, applicants believe they are entitled to the claims herewith presented in addition to those already included in the case. From a careful inspection of the references and of the prior art, it appears that the subject-matter of these claims is novel, and it is therefore believed they should receive favorable consideration.

It is noted that on our photographs of Fig. 1 there is no leader from the number 58 which is used in the specification to designate the screen which overlies the perforations 57. It is difficult from the photographs to determine whether or not the screen 58 is
130 shown, and if it does not appear on the original drawings, the Examiner is respectfully requested to amend Fig. 1 to show a screen overlying said perforations 57 and in close contact with the outer surface of the pipe 39.

Respectfully.

ADAMS & JACKSON.
Attorneys for Applicants.

2-260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

[* Words and figures enclosed in brackets erased in copy.]

Paper No. 15. J. L. D.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior,

United States Patent Office,

Washington, June 27, 1914.
Mailed " " "

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a communication from the examiner in charge of the application of Chapman & Chapman, for Deep Well Pumps, filed Mar. 10, 1909, Ser. No. 482517.

THOMAS EWING,
Commissioner of Patents.

This application has been considered as amended May 18, and May 25, 1914.

Attention is called to the fact that this case is among those to which the Commissioner's Order #2107, of Mar. 12, 1914, is directed.

Relative to the proposed correction of Fig. 1 of the drawing applicants should file a sketch of the proposed correction for the approval of the Examiner, and instructions directing the correction should be embodied in a separate letter. See Rule 9 and the Commissioner's Order No. 2112 of Mar. 30, 1914.

Claims 5, 6, and 7 are readable only on Figs. 16 and 17; claims 9, 10, 11, 14, 15, 16, 22, 27, 28, and 29, on Fig. 1; claims 12, 13, 17, 18, 19, on Figs. 1 and 16, and claims 23 to 26 on Fig. 12. All claims in the case should read upon a single construction. See the Commissioner's decision in *ex parte* Welch, 93 O. G., 2104.

131 The last office action on claims 5, 6, and 7 is repeated.

Claims 9, 10, 11, 14 to 19, and 21 state nothing requiring invention over Fig. 7 of Ivens, #705,844, in view of the vertically adjustable step bearing shown in either Wilken or Park & Ries, both of record, and are rejected.

Claims 12 and 13 are rejected on Fig. 7 of Wilken of record.

Claim 20 is rejected on Jackson of record in view of the adjustable step bearing shown in Park & Ries of record.

Claims 23 to 26 are rejected as not patentable over the fluid pressure operated supporting piston 10, etc., shown in Jackson, of record, and the analogous adjustable supporting means shown in Snow, #669,601, Mar. 12, 1901, (Pumps, Rotary, Open Screw).

Claims 22, 27, 28, and 29 may — allowed as at present advised.

Claims 1 to 4 inclusive and claim 8 stand allowed as at present advised.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
Jan. 12, 1915,
U. S. Patent Office.

Division 9, Paper No. 16,
Jan. 13, 1915,
U. S. Patent Office.

Amendment.

G.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pumps, Filed Mar. 10, 1909, Ser. No. 482,517.

Jan. 9, 1915.

Hon. Commissioner of Patents.

SIR: In response to Office letter of June 27, 1914, we hereby amend as follows:—

Page 10, after the matter inserted in line 23 by the amendment dated May 23, 1914, insert the following:

G[1]. As will be readily understood by those acquainted with the action of centrifugal pumps, water rising from the rotary water raising elements into the lower end of the well tube 12 has a rapid swirling or rotating movement, by reason of which the sand and sediment carried up by the water is forced by centrifugal force toward the outside away from the screen 58, whereby the purifying effect of the said screen is greatly enhanced.

132 Page 16, line 13, cancel "16 to 23" and insert —*16, and 20 to 23*,—

Cancel claims 5, 6 and 7, and change the numerals of former claims 8 and 9 to *5* and *6*, respectively.

Insert the following claims:—

Per H.

G[2]. 7. In a pump, the combination of a water discharge casing, a vertical shaft journaled therein, water-raising means operatively connected with said shaft and actuated by the rotation thereof, means for rotating said shaft, an anti-friction bearing mounted on said shaft above said driving means and held against movement longitudinally with said

shaft, and means for adjusting said anti-friction bearing and said shaft vertically relative to said water discharge casing.

8. In a pump, the combination of a water discharge casing, a vertical shaft journaled therein, water-raising means operatively connected with said shaft and actuated by the rotation thereof, means for rotating said shaft, and mechanism adjustable independently of said water discharge casing during the operation of the pump for raising or lowering said shaft to compensate for wear upon the water-raising means.

9. In a pump, the combination of a water discharge casing a vertical shaft journaled therein, water-raising means operatively connected with said shaft and actuated by the rotation thereof, means for rotating said shaft, and stationary adjusting means adapted to be adjusted independently of said water discharge casing during the rotation of said shaft for raising or lowering the shaft to compensate for wear upon the water raising means.

[Matter enclosed between rules erased in copy.]

√ √ √ √ √ √

Cancel claims 10 to 18, inclusive, claim 20, and claims 23 to 26, inclusive, and change the numerals of claims 19, 21, 22, 27, 28 and 29, to *10* to *15*, respectively.

Insert the following claims:

G³. 12ʰ [16].* The combination with the pump casing, the impeller therein, a shaft bearing carried by the pump casing a line shaft passing through said bearing and carrying said impeller, a pump head, means forming a water conduit and for suspending said pump casing from said pump head, a head bearing member through which said line shaft projects, said head bearing member being mounted on said pump head, a driving pulley on said line shaft, a line shaft casing extending from the pump casing to the pump head and means for effecting a circulation of clear well water from the water conduit through said line shaft casing.

133

13ʰ [17].* In a centrifugal pumping apparatus the following elements in combination, a centrifugal pump, a line shaft for the pump, a discharge duct from the pump to the top of the well through which said shaft passes, a shaft casing for closing said shaft off from the rising column of water in said discharge duct, and means for effecting a circulation of well water inside such shaft casing.

14ʰ [18].* The combination of a well casing, a rotary pump therein, a pump shaft, a casing enclosing said shaft from the rising column of water in the well, means for freeing a portion of the rising column of well water from sand

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[* Words and figures enclosed in brackets erased in copy.]

and detritus and passing the water so freed into said shaft casing.

G³. 15ᵇ [19]*. In a well mechanism, in combination with a rotary pump, a pump shaft, a casing surrounding the shaft from the pump to the top of the well, to protect said shaft from the rising column of well water, and means for purifying a portion of said well water and delivering it into the shaft casing.

16ᵇ [20]*. In a pumping apparatus having a water discharge passage, the combination of a shaft rotatable in said passage, a bearing for said shaft separated from said water discharge passage, and a screen covering a port between said shaft and said water discharge passage adapted to filter water permitted to pass to said bearing for lubricating purposes.

17ᵇ [21]*. In a pumping apparatus, the combination of a water discharge casing, a shaft extending therethrough, a shaft casing located in said water discharge casing separating said shaft therefrom, means for rotating said shaft, means operatively connected with said shaft for forcing water upward through said water discharge casing, a bearing for said shaft in said shaft casing, and a screen covering a port in the wall of said shaft casing below the level of the water about said shaft casing during the pumping operation, said screen being adapted to filter water permitted to pass into said shaft casing for the purpose of lubricating said bearing.

18ᵇ [22]*. The combination of a well casing, a pump shaft therein, a casing enclosing said shaft from the rising column of water in the well, means for rotating said shaft, and means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the water a swirling movement as it passes the lower end of said shaft casing whereby the sand or other sediment carried by the water is directed by centrifugal force away from said shaft casing at its lower end, said shaft casing having a port leading thereinto near its lower end for admitting water thereto.

134

G³. 19ᵇ [23]*. The combination of a well casing, pump shaft therein, a casing enclosing said shaft from the rising column of water in the well, means for rotating said shaft, means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the water a swirling movement as it passes the lower end of said shaft casing whereby the sand or other sediment carried by the water is directed by centrifugal force away from said shaft casing at its lower end, said shaft casing having a port leading thereinto near its lower end for admitting

[*Words and figures enclosed in brackets erased in copy.]

water thereto, and means for straining the water entering said shaft casing.

20[b] |24|* The combination of a well casing, a pump shaft therein, a casing enclosing said shaft from a rising column of water in the well, means for rotating said shaft, said shaft casing having a port leading thereinto for admitting water thereto, and means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the rising water a swirling movement as it passes said port whereby the sand or other sediment carried by the water is directed by centrifugal force away from said port.

G[a]. 21[b] |25|*. In a pumping apparatus, the combination of a water discharge casing, a shaft extending therethrough, a shaft casing located in said water discharge casing separating said shaft therefrom, means for rotating said shaft, means operatively connected with said shaft for forcing water upward through said water discharge casing, and means for purifying a portion of the water pumped and delivering it into said shaft casing near its lower end adapted to discharge the water from the shaft casing upon the cessation of the operation of the pump.

In view of the foregoing amendments a reconsideration and an allowance of this application are respectfully requested. By another letter of even date the changes in the drawing requested by the amendment dated May 23, 1914, have been authorized and requested as required by the Office letter and a photographic copy of the sheet of drawings is sent for filing as is required by the rules. The divisions required by the Office letter have been made, all of the claims now in the case being readable upon the construction shown in Fig. 1. Applicants do not by their cancellation of former claims 5, 6 and 7, and former claims 23 to 26, inclusive, abandon the subject matter of such claims, but reserve the right to insert claims covering such subject matter in any other suitable
135 application or applications they have or may have on file.

It is believed that the office is in error in its rejection of claims 9 to 21, inclusive, on the references cited. The number of claims, however, has been materially reduced, it being believed that the claims retained will sufficiently protect applicants in the use of their novel construction. Former claim 9 (now claim 6) is believed to be clearly allowable over the references inasmuch as no one of the references shows or suggests the combination called for by the claim. It is true, of course, that one reference shows one part and another reference shows another part, but it has been held repeatedly by the courts that the mere fact that the structure of the combination claim might be built up from elements of prior patents does not in any way negative patentability. Moreover, the bearing 1[c] of Ivens is not adapted for use in connection with adjusting means for the shaft. The specification speaks of the pump shaft 3 being seated in the bearing 1[c]. In other words, the bearing at the

[*Words and figures enclosed in brackets erased in copy.]

lower end seems to be the means relied upon for holding the runner out of contact with the casing. The shaft does not seem to be adapted to have any downward adjustment and if it were adjusted upward the mechanism as a whole would be disorganized thereby. It is submitted that this claim should not be rejected upon the references cited nor upon any references which fail to disclose the combination called for.

New claims 7, 8 and 9 are similar to former claim 9, above referred to, in that each of said new claims calls for an adjustability of the pump shaft. It is believed that these new claims will be seen to be clearly free of the references. In connection with these claims especial attention is called to the Park & Ries patent, 801,474. In the construction there shown an anti-friction bearing is mounted upon a screw-threaded support 15, making it appear possible that the shaft is adapted to be adjusted up and down by the screwing up or down of the part 15. It is believed, however, that no such adjustment was intended and that no such adjustment is practically possible in the construction shown by the patent. The plate 15 serves as the upper closure member for the water discharge casing and it must, therefore, be screwed to the end of the threads in the casing 4 in order to prevent leakage. If an adjustment were attempted by a change in the position of the part 15 the structure would be rendered faulty and highly objectionable by reason of the water which would be forced out past the part 15. Moreover, in the Park & Ries construction there is no occasion whatever for a vertical adjustment of the shaft 1. The runner 31-34 is rotated in the cylinder 2 with no part of the cylinder in frictional contact with the runner, and there is no occasion for any adjustment of the runner up and down either for the purpose of providing proper working conditions or for the purpose of compensating for wear. Claim 7 is differentiated in terms from said Park & Ries construction by reason of calling for the anti-friction bearing being mounted on the shaft above the shaft driving means. It is believed that claims 8 and 9 will also be found to be sufficiently differentiated in terms from said Park & Ries patent to warrant their allowance.

136 We are unable to understand on what theory former claims 19 and 21 were held to be met in any way by the patents to Ivens, Wilkin and Park & Ries. No one of these patents shows a bearing below the lowermost runner with means tending in any way to protect such bearing from the sand carried up by the water. It is believed that these two claims must have been rejected by mistake, inasmuch as they are clearly free of the patents and free of any combination of the patents which might be suggested. It is believed that these claims will be found to be allowable.

It is believed that new claims 16, 17, 18 and 19 will be found to be clearly allowable in this application. These are the claims submitted by the Patent Office in the application of Sperry, Serial No. 744,430, for the purpose of probable interference, with the exception that the word "down" is omitted from the claim herewith presented as claim 17, the claim thus calling for a circulation through the

shaft casing rather than for a circulation down through the shaft casing. As is set forth in the argument accompanying the amendment of even date herewith in the Sperry application referred to, no interference is desired between the Sperry application and this application inasmuch as it is conceded by Sperry that the applicants herein are the prior inventors of the subject matter shown and described in this application.

New claims 20 and 21 are claims which were allowed in the said Sperry application, being Sperry's original claims 23 and 24. Inasmuch as these claims clearly read upon the construction of this application it is believed that such claims should be allowed herein.

It is believed that there will be no objection to the allowance of new claims 22, 23 and 24. And it is likewise believed that new claim 25 will be found to be allowable over any prior reference in the case.

In view of the several amendments which have been presented in this application presenting additional claims, it is deemed advisable that a supplemental oath be filed, and such an oath is presented herewith carrying the date of the invention of the structure of the claims as they now stand back to the time of filing the application.

Favorable action is respectfully requested.

Respectfully,

ADAMS & JACKSON,
Attorneys for Applicants.

Mail Room,
Jan. 12, 1915,
U. S. Patent Office.

Supplemental Oath.

STATE OF ILLINOIS,
County of Kane, ss:

Matthew T. Chapman and Mark C. Chapman, whose application for letters patent for improvements in Deep Well Pumps,
137 Serial No. 482,517, was filed in the United States Patent Office on or about the 10th day of March, 1909, being duly sworn, depose and say that they have read the claims of the said application as such claims stand as presented or affected by the amendment of even date herewith and by the amendments dated, respectively, April 27, 1910, April 21, 1911, April 8, 1912, April 28, 1913, May 15, 1914, and May 23, 1914; that the subject matter of the said claims was part of their invention, was invented before they filed their original application, above identified, for such invention, was not known or used before their invention, was not patented or described in a printed publication in any country more than two years before their said application, was not patented in a foreign country upon an application filed more than twelve months prior to their said application,

was not in public use or on sale in this country for more than two years before the date of their said application, and has not been abandoned.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN.

Subscribed and sworn to before me this 9th day of January, 1915.
[SEAL.] FRED B. SHEARER,
Notary Public.

2-260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C.," and not any official by name.

J. L. D.

Paper No. 17.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

B.

Department of the Interior,

United States Patent Office,

Washington, January 20, 1915.
Mailed " " "

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a communication from the Examiner in charge of the application of Chapman & Chapman, for Deep Well pumps, filed Mar. 10, 1909, Ser. No. 482,517.

THOMAS EWING,
Commissioner of Patents.

1:38 This application has been considered as amended Jan. 12, 1915.

Claims 6 and 7 state nothing requiring invention over Ivens #705,844, in view of the thrust bearing construction shown in Park & Ries, both of record, and are rejected thereon.

Claims 8 and 9 are rejected as not patentable over the thrust bearing construction shown in Park & Ries, of record.

Claims 10, 11, and 16 to 25 inclusive may be allowed as at present advised.

Claims 1 to 5 inclusive and claims 12 to 15 inclusive stand allowed.

This rejection is made final in view of the practice established under the Commissioner's decision in *ex parte* Miller, 150 O. G., 827.

The matter of a possible interference will be considered later.

F. M. TRYON, *Ex.*

F. W. B.

Account.

Mail Room,
Jan. 12, 1915,
U. S. Patent Office.

Division 9,
Jan. 25, 1915,
U. S. Patent Office.

Paper No. 18.

Amendment.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent for Deep Well Pumps. Filed March 10, 1909. Serial No. 482,517.

Jan. 9, 1915.

Hon. Commissioner of Patents.

SIR: The Office is respectfully requested to correct Fig. 1 of the drawings sustantially as shown in red ink upon the photographic copy of sheet 1 enclosed herewith, so as to show more clearly the screen 58 mounted about the lower end of the shaft casing 39. The office is also respectfully requested to cancel the numeral 85 from Fig. 12. where it is used to indicate a piston upon the shaft 19. and to substitute therefor the numeral *86*; and to change the numeral 86 in said figure, as it is used to indicate set screws for holding said piston in position, to *86a*.

Charge the cost of these changes, if any, to our account.

Respectfully,

ADAMS & JACKSON,
Attorneys for Applicants.

[Endorsed:] Adams & Jackson. C. U. S. Patent Office. Number 8643. Received Jan. 12, 1915. Chief Clerk. Received in Div. C. Jan. 13, 1915. For Div. 9, 1-23-15 Corrected. No charge. Jan. 27, 1915. To Div. 9.

Print filed with Paper #18, same as Patented Drawing.

(Here follows diagram marked p. 139.)

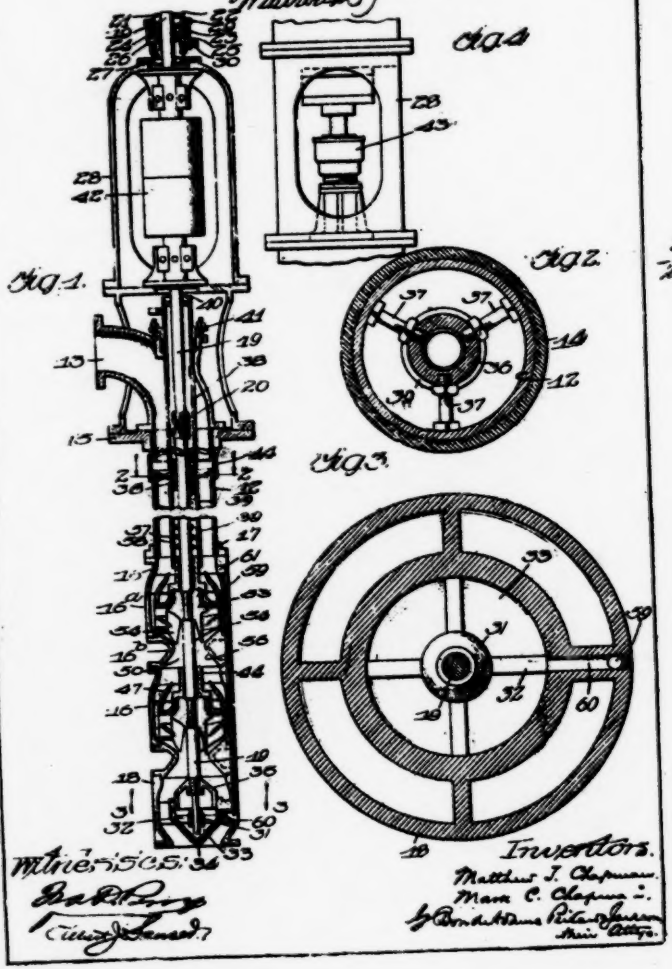
712,517 Pat. Mar. 7, 1902.

Class 103. PUMPS.

Chapman & Westbrook Single Piston.

No. 456.

Chapman & Westbrook $ 139



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Patent Appeal Docket No. 1132.

Westbrook
v.
Chapman, et al.

page 86.

86

139

140 2–079.

Interference.

Intf. "A."

Interference No. 38430, Paper No. 18.

Name-, Matthew T. Chapman & Mark Chapman.
Serial No. 482,517.
Title, Deep Well Pumps.
Filed, March 10, 1909.
Interference with Marvin B. Van Ness.
Decisions of—
Primary Examiner, ——, dated, ——.
Ex'r of Interferences, Favorable, dated, April 16/15.
Board, ——, dated, ——.
Commissioner, ——, dated, ——.

Remarks.

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This should be placed in each application or patent involved in interference in addition to the interference letters by Primary Examiner.

141 2–213.

Forwarded from Div. IX to Examiner of Interferences Jan. 29, 1915.

Paper No. 19.

[Interference.]

Intf. "A."

Department of the Interior,

United States Patent Office,

Washington, D. C., —— —, 190-.

U. S. Patent Office,
Interference Division.
Feb. 2, 1915,
Mailed.

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a copy of a communication from the Examiner

concerning the application of Chapman & Chapman, for "Deep Well Pumps," filed Mar. 10, 1909, Ser. No. 482,517.

Very respectfully,

THOMAS EWING,
Commissioner of Patents.

Room No. 142.

All communications should be addressed to "The Commissioner of Patents, Washington, D. C."

38430.

Your case, above referred to, is adjudged to interfere with others, hereafter specified, and the question of priority will be determined in conformity with the Rules.

The statement demanded by Rule 110 must be sealed up and filed on or before *the* March 8, 1915, with the subject of the invention, and name of party filing it, indorsed on the envelope. The subject-matter involved in the interference is:

1. The combination with the pump casing, the impeller therein, a shaft bearing carried by the pump casing, a line shaft passing through said bearing and carrying said impeller, a pump head, means forming a water conduit and for suspending said pump casing from said pump head, a head bearing member through which
142 said line shaft projects, said head bearing member being mounted on said pump head, a driving pulley on said line shaft, a line shaft casing extending from the pump casing to the pump head and means for effecting a circulation of clear well water from the water conduit through said line shaft casing.

2. In a centrifugal pumping apparatus the following elements in combination, a centrifugal pump, a line shaft for the pump, a discharge duct from the pump to the top of the well through which said shaft passes, a shaft casing for closing said shaft off from the rising column of water in said discharge duct, and means for effecting a circulation of well water inside such shaft casing.

3. The combination of a well casing, a rotary pump therein, a pump shaft, a casing enclosing said shaft from the rising column of water in the well, means for freeing a portion of the rising column of well water from sand and detritus and passing the water so freed into said shaft casing.

4. In a well mechanism, in combination with a rotary pump, a pump shaft, a casing surrounding the shaft from the pump to the top of the well, to protect said shaft from the rising column of well water, and means for purifying a portion of said well water and delivering it into the shaft casing.

The interference involves your application above identified and an application for "Centrifugal Pumping Mechanism," filed by Marvin B. Van Ness, of Welsh, Louisiana, whose attorneys are Fred G. Dieterich & Co., of Washington, D. C.

The relation of the counts of the interference to the claims of the respective parties is as follows:

Counts.	Van Ness.	Chapman & Chapman.
1	1	16
2	14	17
3	6	18
4	7	19

P. D. HASKELL,
Acting Ex'r.

F. W. B.

143 2–260.

Div. 9, Room 142.

Address only "The Commissioner of Patents, Washington, D. C."

J. L. D. Paper No. 22.

All communications respecting this application should give the serial number, date of filing, and title of invention.

B.

Department of the Interior,

United States Patent Office,

Washington, May 25, 1915.
Mailed " " "

Adams & Jackson, Monadnock Block, Chicago, Ill.:

Please find below a communication from the Examiner in charge of the application of Chapman & Chapman, for Deep Well Pumps, filed Mar. 10, 1909, Ser. No. 482,517.

THOMAS EWING,
Commissioner of Patents.

Interference No. 38,430, in which this application was involved having been terminated, and decision rendered in favor of applicants, this case now awaits action in response to Office action dated Jan. 20, 1915.

F. M. TRYON, *Ex.*

F. W. B.

Mail Room,
Jun- 24, 1915,
U. S. Patent Office.

Division 9, Paper No. 23,
Jun- 25, 1915,
U. S. Patent Office.

Amendment.

H.

United States Patent Office.

Div. 9, Room 142.

In the Matter of the Application of Chapman & Chapman for Patent on Deep Well Pumps. Filed March 10, 1909. Serial No. 482,517.

June 22, 1915.

Hon. Commissioner of Patents.

SIR: In response to Office letter of May 25, 1915, we hereby amend
V V V V V
by canceling claims 6, 7, 8, and 9, and by changing the numerals of the remaining claims accordingly.

144 In view of the foregoing amendment which meets fully the requirements of the Office letter, an allowance is very respectfully requested.

Respectfully,

ADAMS & JACKSON,
Attorneys for Applicants.

2–181.

J. B. W.

Serial No. 482,517.

Address only the Commissioner of Patents, Washington, D. C.

Department of the Interior,
United States Patent Office,
Washington, June 30, 1915.

Matthew T. Chapman and Mark C. Chapman.

SIR-: Your application for a patent for an improvement in Deep well pump filed Mar. 10, 1909, has been examined and allowed.

The final fee, twenty dollars, must be paid not later than six months from the date of this present notice of allowance. If the final fee be not paid within that period, the patent on this application will be withheld, unless renewed with an additional fee of $15, under the provisions of Section 4897, Revised Statutes.

The office delivers patents upon the day of their date, and on which their term begins to run. The printing, photolithographing and engrossing of the several patent parts, preparatory to final sign-

57

M. T. & M. C. CHAPMAN.

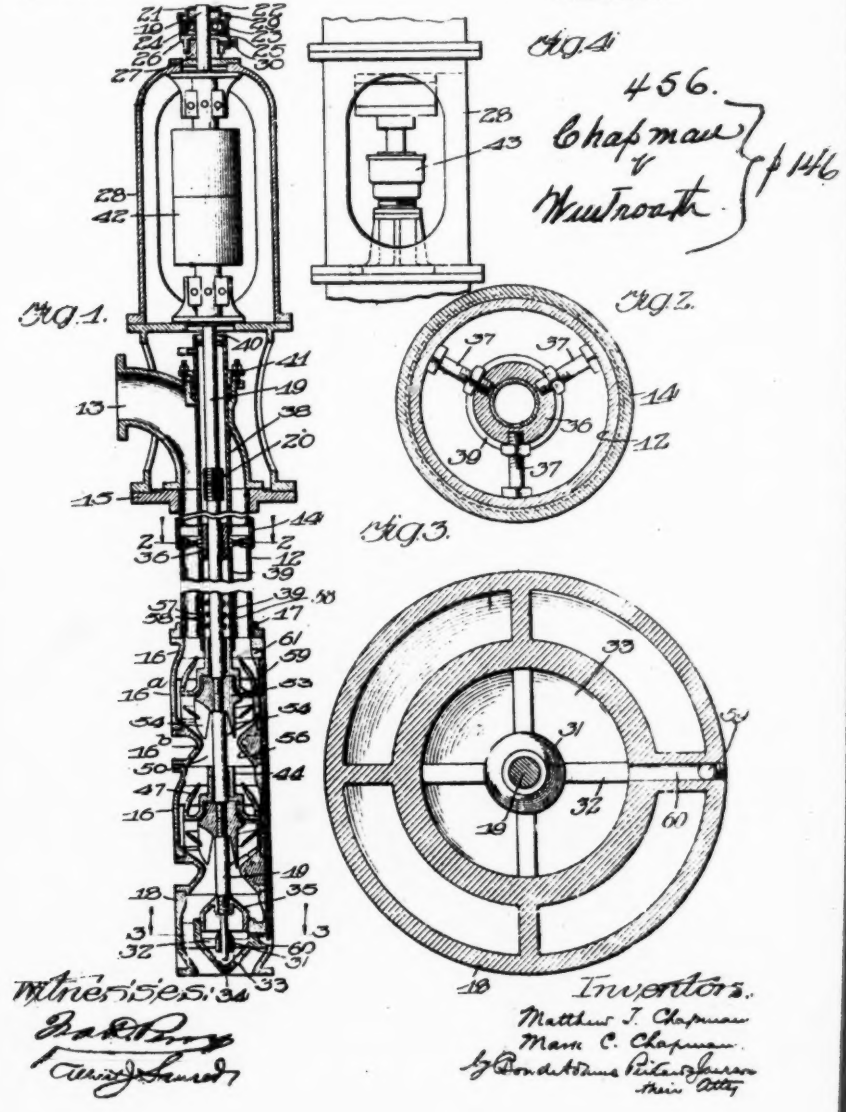
DEEP WELL PUMP.

APPLICATION FILED MAR. 10, 1909.

1,149,633.

Patented Aug. 10, 1915.

8 SHEETS—SHEET 1.



58

M. I. & M. C. CHAPMAN.

DEEP WELL PUMP.

APPLICATION FILED MAR. 10, 1909.

1,149,633.

Patented Aug. 10, 1915.

3 SHEETS—SHEET 2.

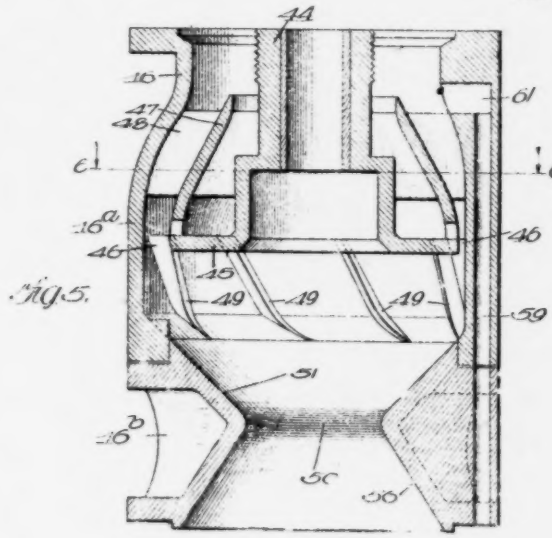


Fig. 5.

456
Chapman
v.
Wintroath
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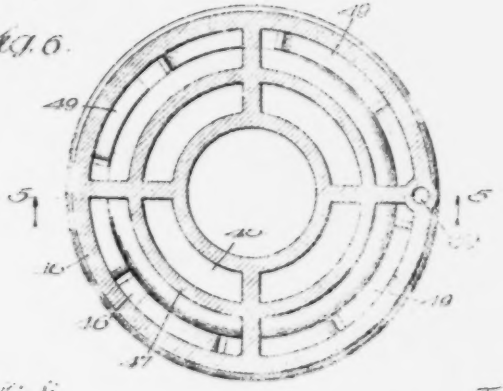

Fig. 6.

Witnesses:

Inventors:

59

M. T. & M. C. CHAPMAN.

DEEP WELL PUMP.

APPLICATION FILED MAR. 10, 1905.

1,149,633.

Patented Aug. 10, 1915.

3 SHEETS—SHEET 3.

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Chapman
Mudgett
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Fig. 7.

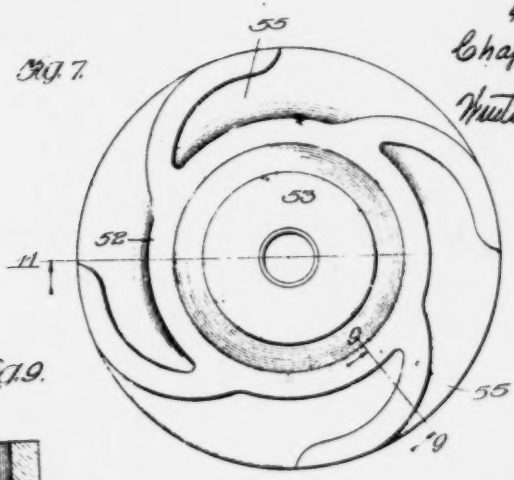


Fig. 9.

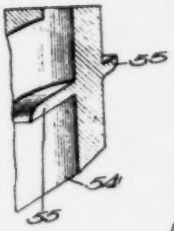
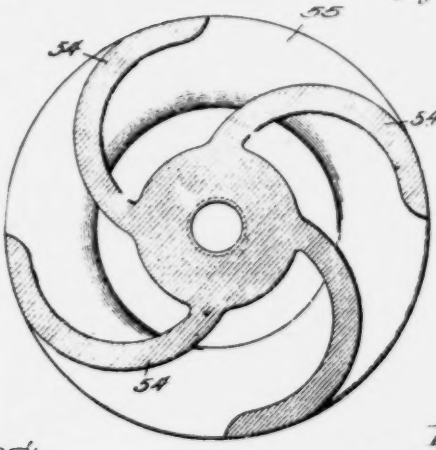


Fig. 8.



Witnesses:
Bartlett
Edward J. Lamed

Inventors.
Matthew T. Chapman,
Mark C. Chapman,
by Bartlett Thum Pritchard & Lamed
their attys.

60

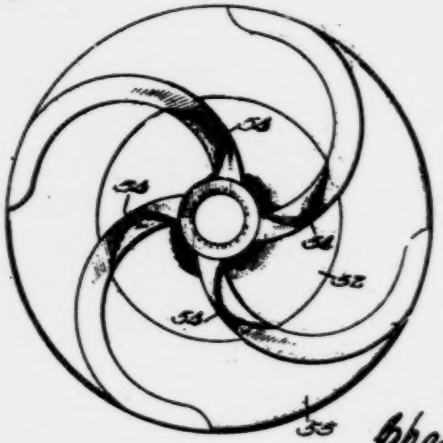
M. T. & M. C. CHAPMAN.
DEEP WELL PUMP.
APPLICATION FILED MAR. 10, 1909.

1,149,633.

Patented Aug. 10, 1915.

8 SHEETS—SHEET 4.

Fig. 10.



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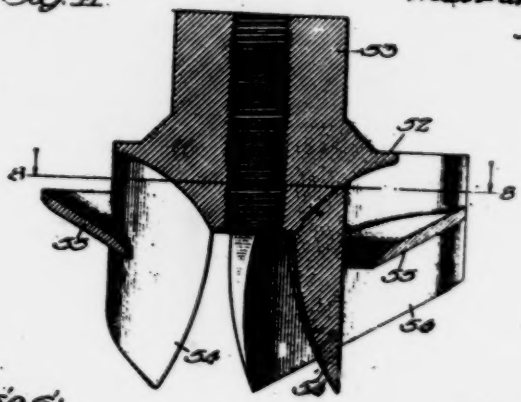
Chapman
Mutreath
7 Claims

Fig. 11.



Witnesses:

Inventors.
Matthew T. Chapman,
Mary C. Chapman,
by Bond Adams, Pickard & Lucas,
their Attys.

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456
Chapman of Nutbrook p/60

M. T. & M. C. CHAPMAN.
DEEP WELL PUMP.
APPLICATION FILED MAR. 10, 1909.

1,149,633.

Patented Aug. 10, 1915.
6 SHEETS—SHEET 5.

Fig. 12.

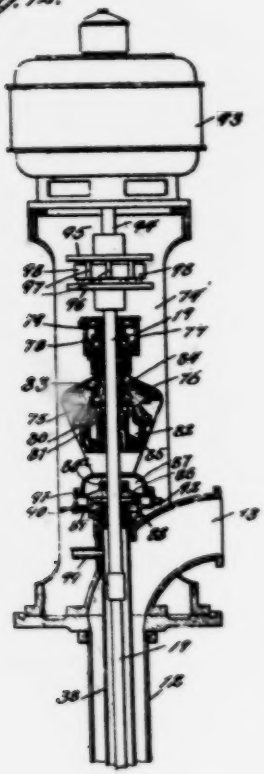


Fig. 13.

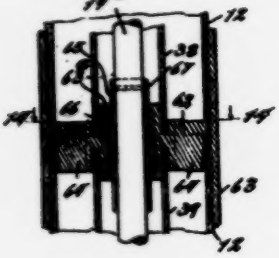
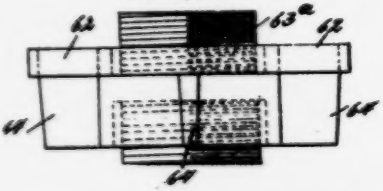


Fig. 14.

Fig. 15.



Witnesses:
Jos. D. Bell
Alex. J. Smith

Inventors
Matthew J. Chapman,
Mann C. Chapman.
by Bond & Bond & Richard Jarman,
their Attys.

456.
Chapman v Weltroath } p 151.

M. T. & M. C. CHAPMAN.
DEEP WELL PUMP.
APPLICATION FILED MAR. 10, 1909.

1,149,633.

Patented Aug. 10, 1915.
8 SHEETS—SHEET 6.

Fig. 16.

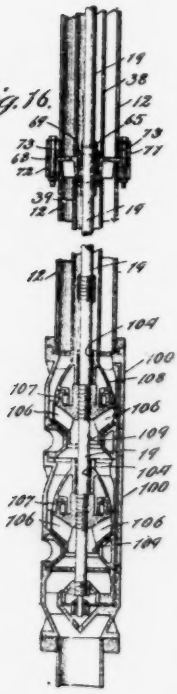


Fig. 17.

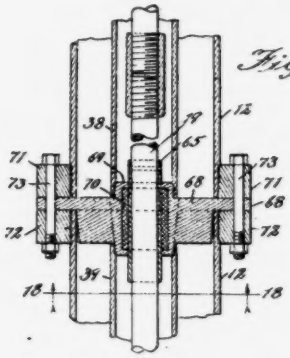


Fig. 18.

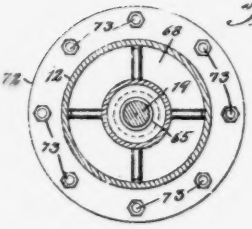
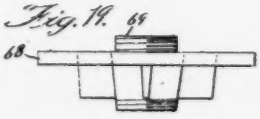


Fig. 19.



Witnesses:
B. A. Perry
Alexr. J. Lamond.

Inventors
Matthew T. Chapman,
Mark C. Chapman,
by Thos. Addams Richardson,
their Atty.

63

M. T. & M. C. CHAPMAN.

DEEP WELL PUMP.

APPLICATION FILED MAR. 10, 1909.

Patented Aug. 10, 1915.

8 SHEETS—SHEET 7.

1,149,633.

Fig. 20.

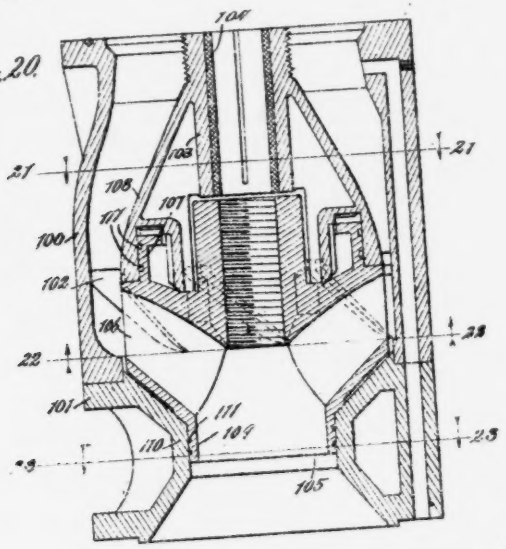


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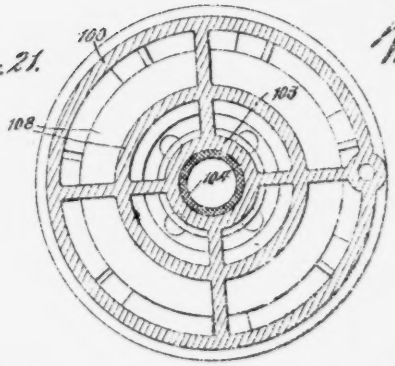
Fig. 21.



Witnesses:

Inventors

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N. T. & M. C. CHAPMAN.
DEEP WELL PUMP.
APPLICATION FILED MAR. 10, 1909.

Patented Aug. 10, 1915.
8 SHEETS—SHEET 8.

Fig. 22.

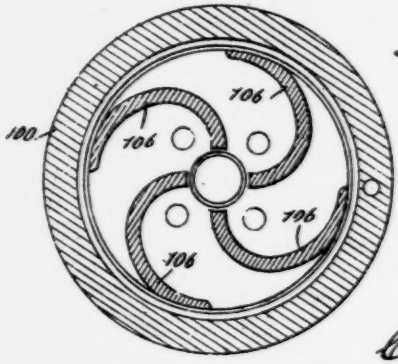

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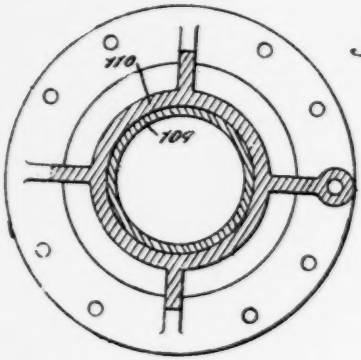
Fig. 23.



Witnesses.

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UNITED STATES PATENT OFFICE.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN, OF AURORA, ILLINOIS, ASSIGNORS TO THE AMERICAN WELL WORKS, OF AURORA, ILLINOIS, A CORPORATION OF ILLINOIS.

DEEP-WELL PUMP.

1,149,633. Specification of Letters Patent. Patented Aug. 10, 1915.

Application filed March 10, 1909. Serial No. 482,517.

To all whom it may concern:

Be it known that we, MATTHEW T. CHAPMAN and MARK C. CHAPMAN, citizens of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Deep-Well Pumps, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to pumps for raising water from deep wells, and has to do more particularly with pumps of the centrifugal type.

The object of our invention is to provide a new and improved pump by which a larger amount of water may be pumped in a given time or by a given expenditure of power. To this end, it consists in the improvements hereinafter described and pointed out in the claims.

In the accompanying drawings,—Figure 1 is a sectional view, illustrating our improved pump; Fig. 2 is a cross-section, on line 2—2 of Fig. 1, illustrating the means for centering and supporting the shaft bearings; Fig. 3 is a section on line 3—3 of Fig. 1, illustrating the construction of the lower end portion of the pumping mechanism; Fig. 4 is a view, showing a motor for driving the operating pump; Fig. 5 is an enlarged detail, being a vertical section on line 5—5 of Fig. 6, illustrating the stationary portion of the water-elevating mechanism; Fig. 6 is a cross-section on line 6—6 of Fig. 5; Fig. 7 is a plan view of the rotary portion of the water-elevating mechanism; Fig. 8 is a horizontal section on line 8—8 of Fig. 11; Fig. 9 is a detail, being a partial section on line 9—9 of Fig. 7; Fig. 10 is an inverted plan view of the part shown in Fig. 7; Fig. 11 is a vertical section on line 11—11 of Fig. 7; Fig. 12 is a partial sectional view showing the upper portion of the pump; Fig. 13 is a vertical section showing a modified construction of the coupling devices; Fig. 14 is a horizontal section on line 14—14 of Fig. 13; Fig. 15 is an enlarged side view of the spider shown in Figs. 13 and 14; Fig. 16 is a vertical section showing a modification; Fig. 17 is an enlarged vertical section showing still another construction of the coupling devices; Fig. 18 is a cross-section on line 18—18 of Fig. 17; Fig. 19 is a side view of the form of spider shown in Figs. 17 and 18; Fig. 20 is an enlarged sectional view of a modified form of pump-cylinder and impeller; Fig. 21 is a cross-section on line 21—21 of Fig. 20; Fig. 22 is a cross-section on line 22—22 of Fig. 20, looking up; and Fig. 23 is a cross-section on line 23—23 of Fig. 20, looking down.

Our improved pumping mechanism is in the nature of a centrifugal turbine pump, since one or more runners or impellers in the nature of turbine wheels are employed in connection with fixed inclined blades to force the water up, the runner blades acting by their rotation to throw the water outward against the stationary inclined blades and thereby compel it to rise through the pump cylinder. Suitable provision is made to counteract the downward pressure on the runners so that such pressure is neutralized soon after the pump is put in service. The several runners are mounted on a common shaft vertically disposed in a suitable cylinder, its lower end being mounted in a bearing which centers and guides it. Intermediate guides and bearings are also provided, and at the lower end of the shaft there is a water piston which is fitted in a suitable cylinder, to which water is admitted under pressure equal to that of the column of water upon the runners, the water below said water piston acting in an upward direction so as to substantially neutralize the downward pressure of the water in the pump cylinder, thus causing the shaft to rotate freely. The shaft is rotated by power applied to it near its upper end, either by a belt or by a direct-connected motor and is vertically adjustable to compensate for wear, as hereinafter described. The upper portion of the pump shaft is inclosed by a sleeve or tube so that the water in the well does not reach it, the water being discharged through a suitable outlet which connects with the upper end of the pump cylinder.

Referring to the drawings for a description of the particular embodiments of our invention therein illustrated,—12 indicates a tube, which, for convenience, will be termed the well-tube as it extends down into the well and forms a conduit for conducting the water raised up to the surface where it is discharged through an elbow or other outlet 13 which, as shown in Figs. 1 and 12, connects with the upper end of the

well-tube 12. It will be understood that the well-tube is made up of any desired number of sections which may be united by plain couplings 14 shown in Fig. 1, but are best united by our improved couplings hereinafter described.

Referring now more particularly to the construction shown in Figs. 1 to 11, 15 indicates a base-plate which supports the portions of the mechanism which are above ground, as shown in Fig. 1.

16 indicates several tubular sections, which will be termed "pump cylinders", since the pumping mechanism operates in them. Any suitable number of pump cylinders may be employed, depending on the depth of the well, the volume of water to be pumped, or the quantity of water to be pumped in a given time. Said sections are alike and are fitted together so that the several units when united serve to make up a sectional pump cylinder. The several sections may be secured together in any suitable way, as by bolts. They are adapted to be lowered into the well, the uppermost cylinder 16 being secured to the end of the well-tube preferably by means of a screw collar 17 which screws upon the lower end of the well-tube 12.

18 indicates a bottom section or cylinder, which is secured to the lowermost cylinder 16 and is provided with a bearing for the lower end of the shaft, as will be hereinafter described.

19 indicates the pump shaft, which is a vertically-disposed shaft mounted centrally in the well-tube and extending from above the ground down to the bottom section 18. Said shaft is preferably solid, but may be tubular, if desired, and is composed of sections united by couplings 20, as shown in Fig. 1. At its upper end it is provided with a nut 21 preferably secured thereto by a set-screw 22, as shown in Fig. 1, said nut bearing on a top bearing-plate 25 which rests on bearing-balls 24 which in turn rest on a plate 25 carried by an adjusting-plate 26. Said adjusting-plate 26 screws upon a head 27, which in turn is carried by a framework 28 resting on the base-plate 15. Thus it will be seen that the shaft 19 is suspended upon the balls 24 by means of the nut 21. The latter is preferably provided with a cap 29 which incloses and protects the ball bearings resting on the upper ledge of the adjusting-plate 26. By screwing the adjusting-plate 26 up or down, obviously the shaft 19 may be raised or lowered to compensate for wear, as hereinafter described. In order to lock the adjusting-plate 26 in its different positions, a set-screw 30 is provided, as shown in Fig. 1, but any other suitable means for the purpose may be employed.

The lower end of the shaft 19 is mounted in a bearing sleeve 31 carried by radial arms 32 supported by the bottom section 18, as best shown in Figs. 1 and 3, said arms being in the lower portion of a cylinder 33, which is provided in said section 18, as shown. The lower portion of said cylinder is tapered downwardly and inwardly toward the center where an opening 34 is provided to permit sand and other similar particles to escape. The upper portion of said cylinder receives a piston 35 which fits it closely and moves vertically therein, said piston being secured upon the lower end of the shaft 19. The function of the piston 35 will be hereinafter set forth.

36 indicates an intermediate bearing for the shaft 19, one or more of which may be provided, said bearing consisting of a babbited sleeve which is supported by radial bolts 37, the outer ends of which are connected with the well-tube, as shown in Figs. 1 and 2. Said bearing, therefore, centers the shaft 19 in addition to supporting it against lateral strain.

38—39 indicate tubes, which connect with the upper and lower ends, respectively, of the bearing sleeve 36, the tube 38 extending up through the elbow 13 and being provided with a suitable cap 40. The latter tube serves to keep the dirty water from grinding or cutting the joints or bearings of the shaft 19. A stuffing-box 41 prevents the escape of water where said tube passes through said elbow. The lower end of the tube 39 extends down to the upper end of the cylinder 16, where it is connected with part of the water-elevating mechanism, as hereinafter described. In the drawings we have shown two sleeves 38—39, but a greater number may be employed, if desired, depending on the depth of the well,—it being understood that the shaft 19 is inclosed by said tubes which separate the upper portion thereof from the water in the well-tube 12.

The shaft 19 may be rotated by any suitable mechanism, as, for example, by means of power applied through pulleys 42, as shown in Fig. 1, or by a motor 43 mounted directly upon the upper end thereof, as shown in Fig. 4.

The interior construction of the cylinders 16 is best shown in Figs. 5 and 6, from which it will be seen that each cylinder is really in two parts, the upper part 16ª having a central sleeve 44 suitably babbited and forming a bearing for the pump shaft 19. Said sleeve is provided at its lower end with an outwardly-extending radial flange 45 which terminates a short distance from the inner face of the cylinder section, leaving a narrow annular space 46, shown in Figs. 5 and 6. Around the outer margin of the flange 45 there is provided a tapered sleeve 47, the smaller diameter of which is at the top, said sleeve being substantially

parallel with the inner face of the cylinder section so that an upwardly and inwardly inclined annular channel 48 is provided for the passage of water. In the annular passage 46 between the margin of the flange 45 and the inner surface of the cylinder section are a series of inclined blades 49 which are fixed to the inner face of the cylinder section and are arranged at short intervals, forming inclined passages through which the water rises to the passage 48 when forced violently outward against said blades 49, as hereinafter described.

16[b] indicates the lower member of the cylinder 16, which is fitted thereto, as shown in Fig. 5, and is shaped to provide a vertical passage which is in the shape of an hour-glass, the intermediate portion thereof being contracted, as shown at 50 in Fig. 5, the upper half of said section forming an inclined bottom 51 for the chamber which contains the blades 49. This tapered bottom coöperates with the turbine wheels, as will hereinafter appear. All the parts of the cylinder 16 are fixed or rigid.

52 indicates the pump runners or impellers, which act to throw the water outward against the inclined blades 49 which direct it upward through the pump cylinders and well-tube. Said runners, of which any number may be used, are placed in the cylinders 16, as shown in Fig. 1, being mounted upon and secured to the pump shaft 19 so as to rotate therewith. This is best secured by making the pump shaft in sections, the ends of adjoining sections being screwed into the hub 53 of the runner 52, as shown in Fig. 1, so that the hub serves as a coupling to unite the sections of the shaft and at the same time the runner is prevented from moving longitudinally upon the shaft.

Each of the runners, in the construction shown in Figs. 1 and 7 to 11, comprises the hub 53 and a series of downwardly-extending spiral blades 54 similar in some respects to the blades of a propeller, said blades being connected intermediately by an annular flange 55 which extends around the wheel a short distance from the upper ends of the blades 54, as shown in Fig. 11, being intersected by said blades, as illustrated in Fig. 9. As best shown in Figs. 1 and 11, the lower edges of the blades 54 are inclined to conform to the inclination of the upper inner face of the member 16[b] which serves to confine the water and facilitate the action of the blades 54 upon it: also to direct the water upward against the stationary blades 49 as it is forced outward and upward by the rotation of the runner. The tapered lower face of the member 16[b], as best shown at 56 in Figs. 1 and 5, directs the upwardly-flowing water toward the runner above it.

The water-elevating mechanism is lowered into the well until the lowermost runner at least is submerged when, by rotating the shaft 19, the runners act to force the water in which they are immersed outward and upward against the stationary blades 49, which, in turn, direct it upward to the space above the runner where it is subjected to the action of the next higher runner, if more than one is used. After passing the uppermost runner the water continues to rise until it is discharged through the outlet 13. For the purpose of lubricating the shaft bearings the lower end portion of the tube 39 is perforated, as shown at 57 in Fig. 1, the perforations being protected by a screen 58, or other suitable filtering medium, to prevent sand or other particles from entering the tube. When the pump is in operation, water from the discharge passage enters tube 39 through the screen and lubricates the shaft bearings above the perforations as well as below them, since the pressure in said tube is the same as that in the well-tube 12. When the pump is not in operation, the water settles back and flows out through the perforations in the tube 39 and through the screen 58, thereby cleansing the screen of any matter accumulated on it. Inasmuch as the perforations 57 and the screen 58 are practically at the lower end of the tube 39, when the pump is stopped all the water in said tube passes out.

As will be readily understood by those acquainted with the action of centrifugal pumps, water rising from the rotary water raising elements into the lower end of the well tube 12 has a rapid swirling or rotating movement, by reason of which the sand and sediment carried up by the water is forced by centrifugal force toward the outside away from the screen 58, whereby the purifying effect of the said screen is greatly enhanced.

In order to counteract the downward pressure upon the pump, we provided for admitting water to the cylinder 33 below the piston 35 by providing a conduit 59 in each of the pump cylinders, best shown in Figs. 1 and 5, said conduit being formed by registering passages in each of the several cylinder sections. The lowermost section 18 is also provided with a passage 60 which communicates with said conduit and with the cylinder 33 so that water is admitted through said conduit to said cylinder. The upper end of the conduit 59 opens into the upper portion of the uppermost cylinder 16 above the runner therein, as shown at 61 in Figs. 1 and 5, so that the pressure of the water in the well-tube 12 is communicated from below to the piston 39, thus creating a balance and relieving the shaft 19 with the pumping mechanism supported thereby from downward pressure. By making the bottom of the cylinder 33 conical and providing the

outlet 34 particles of sand or other matter carried by the water through the conduit 59 gravitate to the bottom of the cylinder and may escape through such opening, thereby avoiding danger of grinding which might occur in case of sand getting in between the cylinder 33 and piston 35. The cylinder 33 and piston 35 also inclose and protect the lower bearing 31.

From the foregoing description it will be seen that our improved pumping mechanism may be advantageously employed to elevate water which cannot be lifted by a suction pump placed at the surface, it being capable of efficient operation for elevating water from depths of hundreds of feet below the surface. By providing two anti-friction bearings, such as the ball bearing at the top from which the shaft is suspended and the water-step at the bottom, we provide not only for properly supporting the drive shaft at the commencement of the operation of the pump, but also during its operation. When the pump is first started, there being little water in the well, the weight of the shaft and parts carried thereby is supported from the ball bearing at the top, but as soon as the water being pumped reaches the uppermost cylinder a portion of it passes through conduit 59 to the cylinder 33 and begins to relieve the shaft of downward pressure, the upward pressure thus caused increasing with the height of the water in the well until the downward pressure is neutralized, as above stated. In operation of pumps of this character there is considerable wear between the runners and the coacting stationary portions of the cylinders in which they are mounted, and to maintain the efficiency of the pump, it is necessary to compensate for this wear. In our improved pumping apparatus this is accomplished by means of the adjusting plate or nut 26 which screws upon the head 27. By adjusting this nut, the pump-shaft 19 may be adjusted vertically so as to maintain the runners in the most effective relation to the cylinders in which they operate. The bearing 31 at the lower end of the pump-shaft permits of this adjustment and also prolongs the life of the pump by properly holding the lower end of the pump-shaft in position, and thereby preventing lateral displacement of the pump runners while in operation.

In Figs. 13, 14 and 15 we have illustrated one of our improved coupling devices for uniting the several sections of the well-tube or tubes and of the protecting tube or tubes and the devices for centering the pump shaft and the bearings therefor. As best shown in Figs. 13 and 14, 62 indicates a spider, the outer margin of which fits between the adjacent ends of adjoining sections of the well-tube 12, and is firmly clamped between them by a coupling sleeve 63 which draws the sections of the well-tube together, as shown in Fig. 13. The spider 62 is provided with a central sleeve 63^a, the upper and lower ends of which are externally screw-threaded to receive the adjacent ends of the tubes 38—39. Thus the sleeve 63^a serves to center the tubes 38—39 and hold them properly in position. This is further secured by providing the spider 62 with depending webs 64, as shown in Figs. 13 and 15. The sleeve 63^a forms a bearing for the pump-shaft 19, which passes through it and is provided with a sleeve 65 which bears in the sleeve 63^a, the latter being provided with a lining 66 of Babbitt metal or other suitable anti-friction material. The sleeve 65 is fixedly secured to the pump-shaft 19 by a rivet 67, or other suitable means, as shown in Fig. 13. Thus the wear is taken by the sleeve 65 instead of by the shaft, and the several parts are properly centered and held in position so that they cannot get out of alinement.

In Figs. 17, 18 and 19 we have shown a modified construction for the same purpose. In the construction therein shown we employ a spider 68 similar in many respects to the spider 62 since it has a central sleeve 60, which is screw-threaded and serves to unite the tubes 38—39 in the manner already described. It also is provided with a babbitted bearing 70, in which the pump-shaft 19 bears, and the latter is provided with the sleeve 65 in the same way as shown in Fig. 13. The spider 68, however, is of greater diameter than the well-tube 12 so that its margin projects beyond the outer surface of the well-tube and is engaged by coupling-rings 71—72 which are screwed, respectively, upon the lower end of the upper section and the upper end of the lower section of the well-tube, as shown in Fig. 17, and thus bear against the opposite faces of the projecting portion of the spider 18. The two rings 71—72 and the spider are all connected together by bolts 73 which pass through them, as shown in Fig. 17, thus firmly securing together the sections of the well-tube.

In Fig. 19 we have shown a modified arrangement of the driving mechanism for operating the pump and the mechanism for supporting and controlling the position of the pump-shaft. In the construction therein shown, 74 indicates a standard having laterally-projecting lugs 75, on which rests a casting 76 which carries certain devices for supporting and lubricating the pump-shaft 19. At the top of said casting 76 is provided a box 77 in which is placed a ball-bearing 78. Above said ball-bearing is a plate or disk 79 which is secured to the upper end of the shaft 19 so that it assists in supporting the weight of the shaft and transmits the same to the ball-bearing 78.

80 indicates a similar ball-bearing in the lower portion of the casting 76 which rests upon a sleeve or plate 81 which is also secured to the shaft 19 and transmits to the ball-bearing 80 the upward thrust of said shaft.

82 indicates an oil-chamber in the lower portion of the casting 76 and communicating by a duct 83 with the interior of the bearing-box 77.

84 indicates a return duct leading from the box 77 to the chamber 82.

85 indicates a wheel or disk secured to the plate 81 in the chamber 82 so that it rotates with the shaft 19 and serves by its rotation to force oil from the chamber 82 up through the duct 83 to the bearing-box 77 thereby lubricating the bearing 78 therein. The oil thus forced up to the box 77 returns through the duct 84 to the chamber 82 and thus is caused to circulate continuously as the pump-shaft 19 rotates. By this arrangement both ball bearings are constantly kept lubricated.

To further assist in supporting the pump-shaft and to regulate the point at which it works, we provide a water-governor comprising a piston 86 which is secured to the shaft 19 in any suitable way, as by set-screws 86' within a chamber 87 located a short distance above the outlet-pipe 13. Said piston 86 overlies a water-chamber 88 with which communicates a passage 89 supplied through a pipe 90 with water under pressure. The arrangement is such that water admitted through the pipe 90 presses upward on the piston 86. Should the pressure of the water admitted increase above the normal the pressure on the piston 86 will raise the pump-shaft, thereby carrying said piston out of contact with the walls of the chamber 88 and permitting the water to escape into the chamber 87 through passages 91 and thence escape through an escape-pipe 92, which communicates with said chamber 87, as shown in Fig. 12. By this construction the pump-shaft rotates on a film of water, which further relieves it from friction and improves its operation.

93 indicates a motor for driving the shaft 19, said motor being mounted on top of the standard 74 and being connected with the shaft 19 by a flexible connection which insures the proper operation of the shaft even though it should get somewhat out of alinement with the motor.

As shown in Fig. 12, 94 indicates the motor-shaft which carries at its lower end a coupling-member 95 which engages a corresponding coupling-member 96 carried at the upper end of the pump-shaft 19. The coupling-member 95 carries a series of downwardly-projecting pins 97 which engage teeth 98 carried by the coupling-member 96, so that the coupling-members interlock and insure the driving of the pump-shaft by the motor.

99 indicates a pipe which communicates with the tube 38 and is used to admit water to the tube 38 to wet the shaft bearings and lubricate them before starting the pump.

In Figs. 16, and 20 to 23 we have shown a modified arrangement of the runners. In the construction shown in said figures, 100—101 indicate the upper and lower members of the pump cylinder section, the upper member being provided with inclined blades or vanes 102, which are substantially the same as the blades 49 shown in Fig. 5. Arranged centrally in the upper section 100 and forming a bearing for the pump-shaft is a sleeve 103 having a lining 104 of Babbitt metal, or other suitable material. The sleeve 103 corresponds with the sleeve 44 and is externally screw-threaded to receive the tube 38 or 39, as the case may be. 105 indicates the runner, which is in many respects similar to the runner 52, and being provided with blades 106 which direct the water outward and upward against the blades 102, thereby causing it to rise through the cylinder. The wheel 105 is adapted to be secured to the pump-shaft in the manner already described, but the construction shown in Figs. 16 to 23 differs from the construction shown in the earlier figures principally in that bearings are provided for the runner above and below the blades 106. As shown in Fig. 20, the runner 105 is provided with an upwardly-projecting annular flange 107 above the blades 106, which has a bearing in the lower end of a conical shell 108 which extends down from the sleeve 103, as shown in Fig. 20. In like manner, at its lower end the runner is provided with a downwardly-projecting flange 109 which has a bearing in an inwardly-projecting portion 110 of the lower member 101 of the pump cylinder, as also shown in Fig. 20. Both the flanges 107 and 109 are provided with grooves 111 forming water-packings so as to permit the runner to move up and down freely without loss of water. The advantage of this construction is that when pumping hard the twist upon the pump-shaft has a tendency to shorten the shaft, but when the strain is off the shaft is again elongated to its normal length. This lengthening and shortening of the shaft necessarily raises and lowers the several runners which are connected with it, and consequently it is necessary to provide for such movement of the runner. Also there is more or less tendency for the runners to rise and fall in normal pumping.

That which we claim as our invention, and desire to secure by Letters Patent, is,—

1. In a pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in

said cylinder, means carried by said shaft for elevating the water in the cylinder, a piston at the lower end of said shaft, and a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the pump to said second cylinder below said piston.

2. In a pump, the combination of a well tube, a rotary shaft extending longitudinally therein, a plurality of pump cylinders communicating respectively with one another and with said well-tube, coöperating devices carried by said shaft and said cylinders for forcing the water upward into the well-tube, a piston at the lower end of said shaft, a cylinder in which said piston moves, and means for admitting water from the pump to the latter cylinder.

3. In a pump, the combination of a well-tube, a rotary shaft extending longitudinally therein, a plurality of pump cylinders communicating respectively with one another and with said well-tube, coöperating devices carried by said shaft and said cylinders for forcing the water upward into the well-tube, a piston at the lower end of said shaft, a cylinder in which said piston moves, means for admitting water from the pump to the latter cylinder, and means at the upper end portion of said shaft for suspending the same.

4. In a deep-well pump, the combination of a well-tube, a cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, means at the upper end portion of said shaft for suspending the same, a piston at the lower end of said shaft, a second cylinder in which said piston moves, said first-mentioned cylinder having a passage for admitting water from the pump to said second cylinder, and an opening in the bottom of said second cylinder.

5. In a pump, the combination of a well-tube, a sectional cylinder communicating therewith, a rotary shaft extending longitudinally in said cylinder, a sleeve in said well-tube surrounding said shaft, means carried by said shaft for elevating the water in the cylinder, a bearing for the lower end of said shaft, and a duct formed integral with the cylinder sections and extending from above said water-elevating means to said bearing.

6. In a pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner for centering the shaft, and means substantially inclosing said bearing for protecting the same.

7. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing for the pump-shaft below the lowermost runner, and means inclosing and protecting said bearing, said protecting means having an opening at the bottom for the escape of sand.

8. In a vertical pump of the type described, the combination of a pump-shaft, one or more runners carried thereby, a bearing above the uppermost runner, a tube surrounding the pump-shaft above the uppermost runner, said tube having one or more perforations to admit water to said upper bearing, and means for straining the water passing through said perforation or perforations.

9. In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means for straining the water passing through said perforation or perforations.

10. In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means for straining the water passing through said perforation or perforations, said straining means being in said water-discharge passage.

11. In a vertical pump of the type described, the combination of a well-tube forming a water-discharge passage, a pump-shaft in said well-tube, one or more runners carried thereby, a bearing for said shaft, a tube surrounding the pump-shaft adjacent to said bearing, said tube having one or more perforations to admit water to said bearing, and means adjacent to the lower end of said tube for straining the water passing through said perforation or perforations.

12. The combination with the pump casing, the impeller therein, a shaft bearing carried by the pump casing, a line shaft passing through said bearing and carrying said impelier, a pump head, means forming a water conduit and for suspending said pump casing from said pump head, a head bearing member through which said line shaft projects, said head bearing member being mounted on said pump head, a driving pulley on said line shaft, a line shaft casing extending from the pump casing to the pump head and means for effecting a circulation of clear well water from the water conduit through said line shaft casing.

13. In a centrifugal pumping apparatus the following elements in combination, a

centrifugal pump, a line shaft for the pump, a discharge duct from the pump to the top of the well through which said shaft passes, a shaft casing for closing said shaft off from the rising column of water in said discharge duct, and means for effecting a circulation of well water inside such shaft casing.

14. The combination of a well casing, a rotary pump therein, a pump shaft, a casing inclosing said shaft from the rising column of water in the well, means for freeing a portion of the rising column of well water from sand and detritus and passing the water so freed into said shaft casing.

15. In a well mechanism, in combination with a rotary pump, a pump shaft, a casing surrounding the shaft from the pump to the top of the well, to protect said shaft from the rising column of well water, and means for purifying a portion of said well water and delivering it into the shaft casing.

16. In a pumping apparatus having a water discharge passage, the combination of a shaft rotatable in said passage, a bearing for said shaft separated from said water discharge passage, and a screen covering a port between said shaft and said water discharge passage adapted to filter water permitted to pass to said bearing for lubricating purposes.

17. In a pumping apparatus, the combination of a water discharge casing, a shaft extending therethrough, a shaft casing located in said water discharge casing separating said shaft therefrom, means for rotating said shaft, means operatively connected with said shaft for forcing water upward through said water discharge casing, a bearing for said shaft in said shaft casing, and a screen covering a port in the wall of said shaft casing below the level of the water about said shaft casing during the pumping operation, said screen being adapted to filter water permitted to pass into said shaft casing for the purpose of lubricating said bearing.

18. The combination of a well casing, a pump shaft therein, a casing inclosing said shaft from the rising column of water in the well, means for rotating said shaft, and means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the water a swirling movement as it passes the lower end of said shaft casing whereby the sand or other sediment carried by the water is directed by centrifugal force away from said shaft casing at its lower end, said shaft casing having a port leading thereinto near its lower end for admitting water thereto.

19. The combination of a well casing, a pump shaft therein, a casing inclosing said shaft from the rising column of water in the well, means for rotating said shaft, means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the water a swirling movement as it passes the lower end of said shaft casing whereby the sand or other sediment carried by the water is directed by centrifugal force away from said shaft casing at its lower end, said shaft casing having a port leading thereinto near its lower end for admitting water thereto, and means for straining the water entering said shaft casing.

20. The combination of a well casing, a pump shaft therein, a casing inclosing said shaft from a rising column of water in the well, means for rotating said shaft, said shaft casing having a port leading thereinto for admitting water thereto, and means actuated by the rotation of said shaft for forcing water upward through said well casing and for giving the rising water a swirling movement as it passes said port whereby the sand or other sediment carried by the water is directed by centrifugal force away from said port.

21. In a pumping apparatus, the combination of a water discharge casing, a shaft extending therethrough, a shaft casing located in said water discharge casing separating said shaft therefrom, means for rotating said shaft, means operatively connected with said shaft for forcing water upward through said water discharge casing, and means for purifying a portion of the water pumped and delivering it into said shaft casing near its lower end adapted to discharge the water from the shaft casing upon the cessation of the operation of the pump.

MATTHEW T. CHAPMAN.
MARK C. CHAPMAN

Witnesses:
HARRY WILLIAM SPILLER,
B. L. PALMER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

ing and sealing, will require about four weeks, and such work will not be undertaken until after payment of the necessary fee.

When you send the final fee you will also send, distinctly and plainly written, the name of the inventor, title of invention, and serial number as above given, date of allowance (which is the date of this circular), date of filing, and, if assigned, the names of the assignees.

If you desire to have the patent issue to assignees, an assignment containing a request to that effect, together with the fee for recording the same, must be filed in this office on or before the date of payment of final fee.

After issue of the patent uncertified copies of the drawings and specifications may be purchased at the price of five cents each. The money should accompany the order. Postage stamps will not be received.

Final fees will not be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

Respectfully,

THOMAS EWING,
Commissioner of Patents.

Adams and Jackson, 1147 Monadnock Bldg., Chicago, Ill.

145 [On left margin:] In remitting the final fee give the serial number at the head of this notice.

[On right margin:] Uncertified checks will not be accepted.

2–327.

$20, c'k. Recd. Jul- 12, 1915. D. C. C., U. S. Pat. Office.

Memorandum of Fee Paid at United States Patent Office.

(Be careful to give correct Serial No.)

Serial No. 482,517.

—— —, 190–.

Inventors: Chapman & Chapman.
Patent to be issued to Assignee of record.
Name of invention: Deep well pump.
Date of payment: July 10, 1915.
Final fee: $20.00.
Date of Filing: March 10, 1909.
Date of circular of allowance: June 30, 1915.

ADAMS & JACKSON,
Solicitors.

Send patent to Adams & Jackson, 1147 Monadnock Building, Chicago, Ill.

(Here follow diagrams and specification marked p. 146 to 160, incl.)

161

2–421.

Division 9.

1909.

Contents.

½. Print, ——.
1. Application, O. K. papers.
2. Rej., May 4, 1909.
3. Amendt. *A*, Apr. 29, 1910.
4. Rejection, June 4, 1910.
5. Letter of appearance, Sept. 30, 1910.
6. Amendt. *B*, Apr. 24, 1911.
7. Rejection, May 11, 1911.
8. Amendt. *C*, Apl. 10, 1912.
9. Rej., May 10, 1912.
10. Substitute power, July 13, 1912.
11. Amendt. *D*, Apl. 30, 1913.
12. Rej., May 29, 1913.
13. Amendt. *E*, May 18, 1914.
14. Amendt. *F*, May 25, 1914.
15. Rej., June 27, 1914.
16. Amendt. *G*, Jan. 12, 1915.
17. Fin. rej., Jan. 20, 1915.
18. Letter and print, Jan. 12, 1915.
19. Print, Jan. 26, 1915.
20. Brief, ——.
21. Interference, Feb. 2, 1915.
22. Letter, May 25, 1915.
23. Amendt. *H*, June 24, 1915.
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162 Class 103—Pumps, Rotary Single Piston.
Title: Deep Well Pump.
(21 claims.)
Class 103/43.

[Endorsed:] 157,351/17.

[Endorsed:] No. 1132. John A. Wintroath, appellant, vs. Matthew T. Chapman et al. Return to Writ of Certiorari. Court of Appeals, District of Columbia. Filed Nov. 2, 1917. Henry W. Hodges, clerk.

163 WEDNESDAY, January 16th, A. D. 1918.

* * * * * * *

No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

The argument in the above entitled cause was commenced by Mr. H. L. Lechner, attorney for the appellant, and was continued by Mr. J. L. Jackson, attorney for the appellees, and was concluded by Mr. Paul Synnestvedt, attorney for the appellant.

164 In the Court of Appeals of the District of Columbia.

Patent Appeal No. 1132.

JOHN A. WINTROATH, Appellant.

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

Opinion.

Mr. Chief Justice SMYTH delivered the opinion of the Court.

This is an appeal from the decision of the Commissioner of Patents in an interference case. Appellant obtained his patent in 1913. In 1909 appellees filed an application for a patent which disclosed the invention of the issue but did not claim it. On July 6, 1915, 20 months after the granting of the Wintroath patent, and more than 6 years after the filing of their parent application, the appellees filed a divisional application embracing the claims of the issue. An interference having been declared, appellant asserted that because appellees were remiss in making their claims, they were barred.

In support of this, appellant points to our decision in Rowntree v. Sloan, 45 App. D. C. 207, where it was held that, in analogy to the time allowed by the Statute for amendments to applications (R. S. Sec. 4894), a failure for more than one year to make a divisional application amounted to laches and barred its allowance. The Commissioner refused to follow the decision on that point, saying it was obiter and ruling that in his judgment the time should be two years instead of one, on the analogy of the Statute which gives an inventor that length of time after a patent has emerged to another for his invention before it is necessary for him to file his own application (R. S. Sec. 4886). He therefore decided that the appellees were not chargeable with laches and awarded them priority.

We do not think the decision in the Rowntree case on the point referred to is obiter. The delay in that case was for 36 months. It was necessary to decide whether or not it constituted laches
165 and in doing so it was proper to indicate the limit—one year—beyond which delay would amount to laches.

Nor do we believe that the two year rather than the one year period should prevail. True, there is some resemblance between the divisional application of the Chapmans and an application of an inventor whose invention has been patented to another, but it is not as intimate as that which exists between their application and one for leave to amend. Their application, if granted, would be in the nature of an amendment to their parent application and would date back to it (Lotz v. Kenney, 31 App. D. C. 205), while there is no element of an amendment in the application of an inventor under the two year Statute. In the one case there is something to amend, in the other nothing. We therefore adhere to the ruling in the Rowntree case, but with this modification however:—the period should be one year unless the applicant shall satisfy the Commissioner that the delay was unavoidable. This brings the holding into closer harmony with the Statute governing amendments (R. S. sec. 4894) than is done by the Rowntree case.

Appellees assert that, however this may be, we have no right to consider laches in an interference proceeding, and they cite a number of decisions of this court to the effect that our jurisdiction in such proceedings "is confined to a determination of the question of priority." Undoubtedly that is the law. But, what is meant by priority? Does it mean priority of conception; or of reduction to practice with diligence; or reduction to practice without diligence; or all of these things and more? In determining the question of priority we have considered which party procured from the other the idea of the invention (Milton v. Kingsley, 7 App. D. C. 531); whether there had been a reduction to practice (Stevens v. Seher, 11 App. D. C. 245); lack of reasonable diligence (Paul v. Johnson, 23 App. D. C. 187; Wickers v. McKee, 29 App. D. C. 4); concealment (Metthes v. Burt, 24 App. D. C. 265); existence of reasonable diligence (Yates v. Huson, 8 App. D. C. 93); the effect of constructive reduction to practice (Sherwood v. Drewson, 29 App. D. C.
166 161); that one party was the agent of another (Milton v. Kingsley, 7 App. D. C. 531; Heuvel v. Bernard, 15 App.

D. C. 510); and the right of a party to make the claims of the issue (Podlesak v. McInnerney, 26 App. D. C. 399; Wickers v. McKee, 29 App. D. C. 4). Priority in an interference proceeding is the ultimate question for determination, but before it can be reached it may be, and usually is, necessary to decide one or more incidental or ancillary questions, as is shown by the decisions just referred to and others which might be cited.

It is argued that, because we have also held that in an interference proceeding we would not decide whether there existed a statutory bar to the granting of a patent to the successful party, or whether either of the parties to the interference would ultimately have the right to a patent, we should not, if we follow the doctrine of those decisions, consider laches in this case. This does not follow. There is a clear distinction between those questions and laches as it arises in this case. It relates to a different purpose.

The dispute in an interference case is in respect to which one of the disputants is entitled to priority concerning a given alleged invention. (Foster v. Antisdel, 14 App. D. C. 552, 555; Prindle v. Brown, 24 App. D. C. 114). Let us suppose that A and B are the contestants. If it be held that as between them A conceived and reduced the invention to practice in 1915 but that B never thought of it until 1916, it would profit B nothing to show that A could not secure a patent for the invention, either because it was not patentable, or his right to a patent was barred by the statute of public use, or for any other reason. Therefore such a showing would be immaterial. These infirmities in A's situation would present questions between him and the Patent Office, in which B as an applicant would have no interest whatever. They would arise in a proceeding different from an interference proceeding, and one in which the parties were not the same. Consequently our holdings that the bar of the statute of public use, lack of patentability and similar questions are not justiciable in an interference proceeding, is in no way
167 inconsistent with the holding that laches is.

There is nothing in the record to show that the Chapman's delay in presenting their application was unavoidable.

In view of what has been heretofore said, the decision of the Commissioner is reversed, and priority as to all the claims of the issue is awarded to John A. Wintroath.

Reversed.

168 MONDAY, March 4th, A. D. 1918.

* * * * * * * *

No. 1132. January Term, 1918.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

Subject Matter: Deep Well Pumps. Interference No. 39,684.

Appeal from the Commissioner of Patents.

This cause came on to be heard on the transcript of the record from the Commissioner of Patents and was argued by counsel. On consideration whereof, It is now here ordered and adjudged by this Court that the decision of the said Commissioner of Patents in this cause be and the same is hereby reversed, and priority as to all the claims of the issue is awarded to John A. Wintroath.

Per Mr. CHIEF JUSTICE SMYTH.

March 4, 1918.

169 Court of Appeals of the District of Columbia, October Term, A. D. 1917.

Patent Appeal No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

Petition for Rehearing.

The petition of Matthew T. Chapman and Mark C. Chapman, appellees in the above entitled cause, respectfully represents to this Honorable Court:

1. That the opinion of the court shows that the decision reached was based on a misunderstanding of a very material fact, to-wit, the undisputed fact that Wintroath never thought of the invention until on or about the first day of October, 1910, which was a year and a half later than Chapman & Chapman's constructive reduction to practice of the invention by filing their application for patent therefor on March 10, 1909. The facts of this case are on all fours with those of the supposititious case suggested in the opinion as an example of one where this court on appeal in an interference case would have no jurisdiction to consider an objection made by the
170 junior party to the grant of a patent to the undisputed prior inventor. The court's own illustration, therefore, absolutely

sustains appellees' contention that Wintroath having admitted Chapman & Chapman's actual priority, the court had no jurisdiction to consider on this appeal any reasons that might exist why a patent should not be granted to appellees for the subject-matter of the issue.

2. In the opinion filed the court modifies the ruling in the case of Rowntree v. Sloan, as follows:

"the period should be one year unless the applicant shall satisfy the Commissioner that the delay was unavoidable."

Nevertheless, and notwithstanding this modification of its former ruling, the court applies the former ruling in this case, and decides against appellees without giving them the opportunity to satisfy the Commissioner, if they can, that the delay was unavoidable. Appellees have not had their day in court on that proposition, and they have had no opportunity to take any testimony or to present any reasons to the Commissioner or to anyone else why the claims of the issue were not introduced into their original application at an earlier date. No such reasons have ever been required of them. The Examiner of Interferences and the Board of Examiners-in-Chief both held themselves bound by the original ruling in the Rowntree-Sloan case, which did not permit any explanation or excuses for delay beyond one year. If that ruling was wrong in that respect, as the court now holds, the judgments rendered pursuant to that ruling were wrong, and it is a denial of justice to deny to appellees the right to excuse their delay. (See Carlin v. Goldberg, 136 O. G., 1222.)

3. The court in considering the question of whether the two-year rather than the one-year period should prevail, overlooked
171 the vital distinction between abandonment or forfeiture of an application and abandonment or forfeiture of an invention. In the whole law of patents there is no rule by which an inventor is deprived of his invention by presumptive abandonment arising through negligence or delay short of two years, but his application may become abandoned by inaction for one year. In the latter case, however, he may file a new application if the two-year bar has not arisen in the meantime and the invention has not been abandoned, or the abandoned application may be revived on a proper showing to the Commissioner. The rule announced in the opinion however, works an absolute forfeiture of the invention after one year, and is, therefore, far more drastic than the laws deliberately enacted by Congress to govern such cases. It has no justification in the law, and clearly is judicial legislation.

4. The opinion is obscure in the reference to appellees' application as "one for leave to amend." Appellees are not here asking for leave to amend an application. Their divisional application was regularly filed pursuant to a requirement for division, and as filed contained the claims of the issue. Under the law as it has been settled for the past fifty years, that application relates back to and is entitled to the same date as the parent application (Lotz v. Kenny,

31 App. D. C., 205). It is not an amendment of the parent application, but is a continuation of it, and was filed in response to a requirement of the Patent Office that the claims in the parent application be limited to one structure. (See official letter of June 27, 1914, Return to Writ of Certiorari, page 42.)

5. In the opinion it is said that "appellees assert that * * * we have no right to consider laches in an interference pro-
172 ceeding." The court has entirely misapprehended appellees' contention in that regard. What appellees contended was and is that the question of laches, as presented by the facts of the case at bar, is purely an ex parte one, as it has nothing whatever to do with the question of priority as between Chapman & Chapman and Wintroath, which is settled beyond all controversy by the official records of the Patent Office. (Appellees' brief, page 14.) This contention is completely sustained by the supposititious case cited by the court and its comments thereon, and the fact that the court notwithstanding decided adversely to appellees is a demonstration that the facts of this case were misunderstood by the court. This is further shown by the discussion in the opinion of what is meant by priority of invention. Laches, where it affects priority, is pertinent, but in the case at bar laches has nothing to do with priority, because Wintroath does not claim to have thought of the invention until long after Chapman & Chapman had conceived, reduced to practice, and filed their application for patent for it.

6. The ruling of the court in this case is in direct conflict with the decision of the Supreme Court of the United States in U. S. v. American Bell Telephone Co. et al., 167 U. S., 224, in which the court held that an applicant for patent prosecuting his application in accordance with the provisions of the statutes is entitled to avail himself of the delays which the law allows, and holds that—

"the statute has given this right and no consideration of the public benefit can take it from him. * * * No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public."

However worthy may have been the motive of this court in announcing the ruling in Rowntree v. Sloan, that ruling, if ap-
173 plied to a case such as this, where the patentee does not claim conception until after the applicant's filing date, and there is no controversy as to the identity of the subject-matter of the issue, has no basis in the statutes. On the contrary, it is directly in conflict with the statutes and with the ruling of the Supreme Court in the Bell Telephone case above cited, and in fact, is judicial legislation, and, therefore, unconstitutional. Moreover, it is unfair and inequitable, because it is retroactive, and deprives applicants who may be prosecuting their applications for patent according to the laws and practice as they have existed for generations, of rights which they have under the statutes, and absolutely bars the granting of patents under conditions which fully meet the requirements of the

patent statutes. Even Congress in legislating regarding the rights of inventors is careful to safeguard the interests of applicants having pending applications and does not enact laws which deprive applicants, without notice, of rights theretofore possessed by them. Much less should the courts do so, even if they possessed the power.

Wherefore your petitioners pray this Honorable Court for a rehearing of the above entitled cause.

MATTHEW T. CHAPMAN,
MARK C. CHAPMAN,
By ADAMS & JACKSON,
Their Attorneys.

I hereby certify that I am of counsel for the above named petitioners, and that in my judgment the above petition is well founded in law and ought to be granted.

JOHN L. JACKSON,
Counsel for Petitioners.

Chicago, March, 1918.

(Endorsed:) No. 1132, Patent Appeal Docket. John A. Wintroath, Appellant, v. Matthew T. Chapman et al. Petition for rehearing. Court of Appeals, District of Columbia. Filed Mar. 16, 1918. Henry W. Hodges, Clerk.

174 SATURDAY, March 23rd, A. D. 1918.

* * * * * * *

No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN et al.

In consideration of the petition for a rehearing in the above entitled cause, It is by the Court this day ordered that said motion be and the same is hereby denied.

175 Court of Appeals of the District of Columbia.

I, Henry W. Hodges, Clerk of the Court of Appeals of the District of Columbia, do hereby certify that the foregoing printed and typewritten pages numbered from 1 to 174 inclusive, constitute a true copy of the transcript of record and proceedings of said Court of Appeals in the case of John A. Wintroath, Appellant, vs. Matthew T. Chapman, and Mark C. Chapman. No. 1132, Patent Appeal Docket, April Term, 1918, as the same remain upon the files and records of said Court of Appeals.

In testimony whereof I hereunto subscribe my name and affix the seal of said Court of Appeals, at the City of Washington, this 8th day of April, A. D. 1918.

[Seal of the Court of Appeals of the District of Columbia.]

HENRY W. HODGES,
Clerk of the Court of Appeals of the District of Columbia.

176 UNITED STATES OF AMERICA, *ss:*

The President of the United States of America, To the Honorable the Judges of the Court of Appeals of the District of Columbia, Greeting:

[Seal of the Supreme Court of the United States.]

Being informed that there is now pending before you a suit in which John A. Wintroath is appellant, and Matthew T. Chapman and Mark C. Chapman are appellees, No. 1132, Patent Appeal Docket, which suit was removed into the said Court of Appeals by virtue of an appeal from the Commissioner of Patents, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Court of Appeals and removed into the Supreme Court of the United
177 States Do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Edward D. White, Chief Justice of the United States, the sixteenth day of June, in the year of our Lord one thousand nine hundred and eighteen.

JAMES D. MAHER,
Clerk of the Supreme Court of the United States.

178 [Endorsed:] File No. 26,528. Supreme Court of the United States, No. 1061, October Term, 1917. Matthew T. Chapman et al. vs. John A. Wintroath. Writ of Certiorari. Court of Appeals District of Columbia. Filed Jun. 26, 1918. Henry W. Hodges, Clerk.

179 In the Court of Appeals of the District of Columbia. October Term 1917.

Patent Appeal Docket, No. 1132.

JOHN A. WINTROATH, Appellant,

vs.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN.

It is stipulated by Counsel for the parties to the above entitled cause that the certified transcript of record in said cause heretofore filed in the Supreme Court of the United States in connection with the application of said Matthew T. Chapman and Mark C. Chapman for a Writ of Certiorari directed to the Court of Appeals of the District of Columbia, which application was on the 10th day of June, 1918, granted by the Supreme Court, can be taken as a return to said writ.

PAUL SYNNESTVEDT,
HARVEY L. LECHNER,
Counsel for Appellant.
JOHN L. JACKSON,
Counsel for Appellees.

[Endorsed:] No. 1132, Patent Appeal Docket. John A. Wintroath, Appellant, vs. M. T. Chapman and M. C. Chapman. Stipulation. Court of Appeals, District of Columbia. Filed Jun. 26, 1918. Henry W. Hodges, Clerk.

I, Henry W. Hodges, Clerk of the Court of Appeals of the District of Columbia, do hereby certify, in obedience to the writ of certiorari hereto attached and returned herewith, the foregoing to be a true and correct copy of the stipulation of counsel filed in said cause on the 26th day of June, A. D. 1918.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of said Court at the City of Washington, District of Columbia, this 26th day of June, A. D. 1918.

[Seal of the Court of Appeals of the District of Columbia.]

HENRY W. HODGES, *Clerk.*

180 [Endorsed:] File No. 26,528. Supreme Court U. S. October Term, 1918. Term No. 456. Matthew T. Chapman, et al., Petitioners, vs. John A. Wintroath. Writ of certiorari and return. Filed June 26, 1918.

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1917.

No. .

MATTHEW T. CHAPMAN and MARK C. CHAPMAN,
Petitioners,

vs.

JOHN A. WINTROATH.

PETITION FOR A WRIT OF CERTIORARI TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA, AND BRIEF IN SUPPORT THEREOF.

To the Honorable, The Chief Justice and Associate Justices of the Supreme Court of the United States:

Your petitioners, Matthew T. Chapman and Mark C. Chapman, respectfully pray for a writ of certiorari to review the judgment of the Court of Appeals of the District of Columbia in the above-entitled cause.

Questions Presented.

The questions presented are:

1. Where an applicant for patent has filed and prosecuted his application strictly according to the provisions of the Statutes and the Rules of the Patent Office, can he lawfully be refused a patent on the sole ground that he did not introduce certain specific claims into his application within one year after the issuance, without notice to him, of a patent containing such claims to a *later* inventor and *later* applicant?

2. On an interference appeal from the Patent Office under the Act of February 9, 1893 (27 Stat. L., 434, Ch. 74), is the jurisdiction of the Court of Appeals of the District of Columbia confined to a determination of the question of priority of invention, and may the question of whether a statutory bar exists to the grant of a patent to the actual first inventor of the subject-matter of the issue be determined on such appeal?

Brief Statement of the Case.

The judgment of the Court of Appeals of the District of Columbia sought to be reviewed was rendered on an interference appeal taken by the respondent, Wintroath, from the decision of the Commissioner of Patents, which awarded priority of invention as to the subject matter of the issue to the petitioners, Chapman and Chapman. The Court of Appeals reversed the decision of the Commissioner and awarded priority to Wintroath on the sole ground that because Chapman and Chapman did not introduce into their application the precise claims of the issue of the interference within one year from the date of the grant of Wintroath's patent containing such claims they were estopped to make

them at all, under the authority of the recent decision of the same court in *Rowntree* v. *Sloan*, 227 O. G., 744; 45 App. D. C., 207. The decisions of the lower tribunals of the Patent Office followed the ruling of the Rowntree-Sloan case, but the Commissioner held that the doctrine therein announced was inconsistent with the statutes and declined to apply it.

Chapman and Chapman were the first to file an application fully showing and describing the invention in controversy, and Wintroath's patent was applied for and issued while Chapman and Chapman's original application was pending and without notice to them. Later, and while their original application was still pending in the Patent Office, Chapman and Chapman, as required by the Examiner, filed a divisional application for certain subject-matter, including the invention in controversy, which was withdrawn for that purpose from their original application. The precise claims of the interference issue were made in such divisional application about one year and eight months after Wintroath's patent was issued.

It is not controverted that Chapman and Chapman were the *actual* first inventors of the issue, as Wintroath's sworn date of conception thereof was more than a year and six months later than Chapman and Chapman's filing date. That Chapman and Chapman's original and divisional applications were filed and prosecuted according to the provisions of the Statutes and the Rules of Practice, and were never abandoned or forfeited, is also not disputed. The judgment of the Court of Appeals awarding priority to Wintroath—notwithstanding his own admission that he was not the actual first inventor of the subject-matter of the interference—on the sole ground that Chapman and Chapman were estopped from claiming such invention be-

cause they did not make certain specific claims therefor within one year after Wintroath's patent was issued, is, therefore, a judicial finding establishing as the law of the Patent Office the affirmative of Question 1 presented by this petition.

As the effect of the ruling of the Court of Appeals is that Chapman and Chapman, admittedly the first inventors thereof, abandoned the invention in controversy by failing to make certain claims within a limited time, the decision sought to be reviewed is necessarily predicated upon the right of the Court of Appeals to consider and determine on an interference appeal the question of a statutory bar to the grant of a patent to one of the parties—notwithstanding the ruling by this court that the Court of Appeals is without jurisdiction so to do. (*Lowry* v. *Allen*, 203 U. S., 476.) This point is raised by Question 2 presented by this petition.

Reasons of Public Import for the Issuance of the Writ.

This case is of great importance for the following reasons:

The decision of the Court of Appeals on the point raised by Question 1, presented by this petition, overturns the practice of the Patent Office as it has existed for more than forty years, and establishes a new rule inconsistent with the Statutes, which applies generally to all applicants for patents.

Said decision is obnoxious to and defeats the long-established policy of the Patent Laws to reward the inventor who was the first to conceive and perfect his invention and to disclose it to the public.

It bars the Patent Office in certain cases from proceeding under Section 4904 Rev. Stat, to ascertain who, as

between rival claimants, is, in fact, the prior inventor.

It denies to applicants rights specifically given them by the Statutes of the United States.

It is unconstitutional because it is an assumption by the Court of Appeals of legislative powers and the right to enact laws in derogation of the laws of Congress. (See *Boston Store* v. *Am. Graphophone Co. et al.*, 249 O. G., 985, p. 988.)

It is directly in conflict with the decision of this court in the case of *U. S.* v. *American Bell Telephone Co. et al.*, 167 U. S., 224.

It is retroactive and divests applicants of rights possessed by them under the Statutes and Rules of Practice of the Patent Office at the time their applications were filed.

It is inconsistent with the established Patent Law of the country as defined by this court and by the several Circuit Courts of Appeals.

As regards the point raised by Question 2 presented by this petition, the decision of the Court of Appeals is directly in conflict with the decision of this court in the case of *Lowry* v. *Allen*, 203 U. S., 476, which specifically holds that on interference appeals the Court of Appeals of the District of Columbia has jurisdiction to consider only the question of priority of invention, and is without jurisdiction to consider the question of the existence of a statutory bar to the grant of a patent to one of the parties.

It is also directly in conflict with many of its own late decisions, all of which deny the jurisdiction of the Court of Appeals to consider the question of a statutory bar on interference appeals.

Other Reasons.

The action of the Court of Appeals in decreeing priority to Wintroath notwithstanding the indisputable fact that he conceived the invention long after Chapman and Chapman filed their original application for patent fully disclosing such invention, which application was regularly prosecuted according to law and the Rules of the Patent Office, and was never abandoned or forfeited, has no justification in law, is a dangerous assumption of arbitrary power by the court, is a deliberate disregard of the authority of this court (see *U. S.* v. *Am. Bell Tel Co.*, 167 U. S., 224), and is clearly a denial of justice.

Chapman and Chapman having completed the invention and filed their application for patent therefor before Wintroath's conception thereof, the action of the Court of Appeals in assuming jurisdiction in this case to consider and decide the question of a statutory bar to the grant of a patent to Chapman and Chapman was erroneous and in direct conflict with the ruling of this court in *Lowry* v. *Allen*, 203 U. S., 476.

In view of the undisputed fact that Chapman and Chapman were the first inventors of the subject-matter of the issue, the judgment of the Court of Appeals awarding priority of invention to Wintroath was erroneous and should be reversed.

For these reasons it is submitted that a writ of certiorari should issue and the questions involved be determined by this court.

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

BRIEF IN SUPPORT OF PETITION.

Statement of the Facts.

There is no controversy as to the facts, which are as follows:

On March 10, 1909, the petitioners, Chapman and Chapman, filed their application, Serial No. 482,517, for letters patent for certain improvements in Deep Well Pumps, which application was regularly prosecuted according to the Statutes and the Rules of the Patent Office until it matured into letters patent No. 1,149,633, dated August 10, 1915.

On July 6, 1915, the petitioners filed their application for patent, Serial No. 38,254, as a division of their said application No. 482,517, *then still pending,* describing and claiming in such divisional application certain subject-matter fully shown and described in said parent application No. 482,517, such divisional application being filed in accordance with the Statutes and the Rules of Practice of the Patent Office. Under the settled practice as it has been established for many years, said divisional application related back to and was entitled to the date of said parent application.

On December 2, 1912, the respondent, John A. Wintroath, filed his application for patent, Serial No. 734,649, showing and describing certain subject-matter shown and described in the petitioners' said original application, and also shown and described in petitioners' said divisional application. Said Wintroath application was regularly prosecuted without notice to petitioners, and on November 25, 1913, matured into letters patent No. 1,079,679.

On March 21, 1916, an interference was declared in the Patent Office between your petitioners and said Win-

troath, the subject-matter of said interference being defined in claims 2, 3 and 4 of said Wintroath patent, and claims 1, 2 and 3 of the petitioners' application. It is unnecessary to consider in detail the claims which constitute the subject-matter of the interference as it will suffice for the purpose of this petition to say that the invention is the combination with the power shaft of a deep-well pumping mechanism, of a fluid-operated bearing which supports said shaft, and an auxiliary bearing for sustaining resultant downward thrust of the power shaft. The Chapman and Chapman original application, as filed, illustrated and described said subject-matter, and contained claims for each of the bearings combined with the power shaft, but it contained no claims for the combination of both bearings with the power shaft, and claims for such specific combination were not made by them until they filed their divisional application on July 6, 1915.

The usual preliminary statements were required to be filed on or before May 1, 1916, and were duly filed by both parties.

In his preliminary statement Wintroath declared that he conceived the invention contained in the claims of his said patent on or about the first day of October, 1910, which was more than one year and six months *after* Chapman and Chapman's original application fully showing and describing said invention was filed in the Patent Office. In view of the fact that Wintroath's date of conception of the invention was later than Chapman and Chapman's filing date their preliminary statement was not opened for publication, and they have been given no opportunity to prove the facts therein set forth.

On May 5, 1916, in accordance with Rule 114* of the

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* See foot note p. 12.

Patent Office, the Examiner of Interferences served notice on Wintroath that judgment on the record would be entered against him unless he should, within 30 days, show sufficient cause why such action should not be taken.

On June 21, 1916, after having filed certain motions which are not material to this petition, Wintroath moved for judgment on the record in his favor on the ground that Chapman and Chapman were estopped from making the claims of the issue, that the facts which raise the estoppel also work an abandonment, and that to award the claims to Chapman and Chapman would, under the facts, be against public policy.

This motion was based entirely upon the then just published decision of the Court of Appeals of the District of Columbia in the case of *Rowntree* v. *Sloan* (227 O. G., 744; 45 App. D. C., 207), in which it was held that "*Sloan's laches, in failing within a reasonable time after the issuance of the Rowntree patent to make these claims, estopped him to make them at all. . . . If he thought these claims read upon his application, it was his duty promptly to make them, at least within the time allowed for amendment after Office action* (one year), *and his failure to do so is fatal to his present contention.*"

The Examiner of Interferences, in deciding Wintroath's motion for judgment in his favor, held that the doctrine of *Rowntree* v. *Sloan* applied, and awarded priority to Wintroath *notwithstanding the fact that the records of the Patent Office showed that he was not the first inventor of the subject-matter of the interference.*

Chapman and Chapman accordingly appealed to the Board of Examiners-in-Chief, who affirmed the decision of the Examiner of Interferences on the ground that they were bound by the decision of the Court of Appeals in the Rowntree-Sloan case, and did not feel that they were

authorized to set aside the practice instituted by that decision.

Chapman and Chapman thereupon appealed to the Commissioner of Patents, who reversed the decision of the Board of Examiners-in-Chief and the decision of the Examiner of Interferences, and awarded priority of invention to Chapman and Chapman. In deciding the case the Commissioner said (Record, p. 84):

> "To establish a fixed limit of one year after which claims may not be copied from a patent presents two serious difficulties.
>
> "In the first place, an applicant who has waited more than one year to amend his application may save his rights by showing to the Commissioner that the delay was unavoidable (Revised Statutes, Section 4894). Moreover, generally speaking, laches is a charge which is rebuttable unless the delay exceeds a period specified by statute. No matter what period be taken it seems clear, therefore, that the right to explain the delay must be granted to the applicant.
>
> "In the second place, an inventor after another has patented the invention may wait up to two years before filing his own application therefor (Revised Statutes, Section 4886). Since the making of a claim is a mere incident to the patenting of an invention, a patent could not be denied on any theory of laches in such a case.
>
> "No reason is seen why a stricter rule should be laid down to regulate the conduct of an inventor who has already filed his application at the time when a rival patent is granted than would be applied to one who filed after the rival patent was granted.
>
> "In the Rowntree-Sloan case the question whether the limit of time should be set at one year or two years was not directly involved and therefore presumably was not considered as fully as it would have been had it been necessary for the disposition of the case.
>
> "I am persuaded that on further consideration the Court of Appeals instead of selecting the time

allowed for amendment by Section 4894 will follow Section 4886, making the time two years.

"The limit of two years would also be supported by analogy with the treatment of reissue cases in *Miller* v. *Brass Company,* 104 U. S. 350, *Mahn* v. *Harwood,* 112 U. S. 354, and *Wollensak* v. *Reiher,* 115 U. S. 101. There is, however, this difference that whereas the rule in reissue cases demands diligence at all times with especially good explanation if the delay exceeds two years, the diligence of one who, having already filed, copies its claims within two years of the granting of a patent, cannot be inquired into without imposing a condition more strict than is imposed by Section 4886 upon one who does not file his application until after the rival patent has been granted."

Wintroath thereupon appealed to the Court of Appeals of the District of Columbia, which court held that because Chapman and Chapman did not make the precise claims of the interference issue until about one year and eight months after the issuance of the Wintroath patent, they were estopped from making them at all, and that, therefore, Wintroath was entitled to judgment of priority of invention notwithstanding the fact that he did not conceive such invention until more than a year and a half after Chapman and Chapman had filed in the Patent Office an application fully illustrating and describing such invention. The court definitely announced its adherence to the doctrine of the Rowntree-Sloan case with the modification, however, that the period should be one year unless the applicant should satisfy the Commissioner that the delay was unavoidable, but gave Chapman and Chapman no opportunity to present such a showing.

Judgment was entered accordingly on March 4, 1918.

On March 16, 1918, Chapman and Chapman filed their petition for rehearing, which petition was, on the 23rd day of March, 1918, denied.

The present petition is brought to review the aforesaid judgment of the Court of Appeals of the District of Columbia with respect to the propositions of law upon which it was founded.

Statutes Involved.*

Sec. 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than *two years prior to his application*, and not in public use or on sale in this country for more than two years prior to his application, unless the same

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* Patent Office Rules Involved.

Rule 68. The applicant has a right to amend before or after the first rejection or action; and he may amend as often as the examiner presents new references or reasons for rejection. . . .

Rule 77. If an applicant neglect to prosecute his application for one year after the date when the last official notice of any action by the office was mailed to him, the application will be held to be abandoned, as set forth in Rule 171. . . .

Rule 93. An interference is a proceeding instituted for the purpose of determining the question of priority of invention between two or more parties claiming substantially the same patentable invention. The fact that one of the parties has already obtained a patent will not prevent an interference, for, although the Commissioner has no power to cancel a patent, he may grant another patent for the same invention to a person who proves to be the prior inventor.

Rule 94. Interferences will be declared in the following cases, when all the parties claim substantially the same patentable invention; . . .

(2) Between an original application and an unexpired patent containing conflicting claims, when the applicant, having been rejected on the patent, shall file an affidavit that he made the invention before the patentee's application was filed. . . .

Rule 114. If the junior party to an interference, or if any party thereto other than the senior party, fails to file a statement, or if his statement fails to overcome the *prima facie* case made by the respective dates of

is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor.

Sec. 4887. . . . But no patent shall be granted on an application for patent for an invention or discovery or a design which had been patented or described in a printed publication in this or any foreign country more than *two years* before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country for more than two years prior to such filing.

Sec. 4894. All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be

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application, such party will be notified by the examiner of interferences that judgment upon the record will be rendered against him at the expiration of thirty days, unless cause is shown why such action should not be taken.

Rule 116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts.

Rule 171. An abandoned application is one in which all the essential parts have not been filed so that it is completed and prepared for examination within a period of one year, or which the applicant has failed to prosecute within one year after any action therein of which notice has been duly given (see Rules 31 and 77), or which the applicant has expressly abandoned by filing in the office a written declaration of abandonment, signed by himself and assignee, if any, identifying his application by title of invention, serial number, and date of filing. (See Rule 60.)

Prosecution of an application to save it from abandonment must include such proper action as the condition of the case may require. The admission of an amendment not responsive to the last official action, or refusal to admit the same, and any proceedings relative thereto, shall not operate to save the application from abandonment under section 4894 of the Revised Statutes.

shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

Sec. 4903. Whenever, on examination, any claim for a patent is rejected, the Commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejection, together with such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for patent, with or without altering his specifications, the Commissioner shall order a re-examination of the case.

Sec. 4904. Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any *unexpired* patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the Commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the board of examiners-in-chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe.

ACT OF FEB. 9, 1893, CH. 74; 27 STAT. L., 434.

Sec. 9. That the determination of appeals from the decision of the Commissioner of Patents, now vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of section seven hundred and eighty of the Revised Statutes of the United States, relating to the District of Columbia, shall hereafter be, and the same is hereby, vested in the court of appeals created by this act;

and in addition any party aggrieved by a decision of the Commissioner of Patents in any interference case may appeal therefrom to said court of appeals.

First Question.

Where an applicant for patent has filed and prosecuted his application strictly according to the provisions of the Statutes and the Rules of the Patent Office, can he lawfully be refused a patent on the sole ground that he did not introduce certain specific claims into his application within one year after the issuance, without notice to him, of a patent containing such claims to a later inventor and later applicant?

Under Section 4886, Rev. Stat., an issued patent is not a bar to the grant of a patent for the same invention to a *later* applicant unless the later application was filed more than *two* years after the grant of the patent, and under no circumstances does the Statute make the issuance of a patent to one inventor a bar to the grant of a patent for the same invention to an *earlier* applicant who is duly prosecuting his application. On the contrary, Section 4904, Rev. Stat., specifically makes provision for the determination of the question of priority as between the patentee of any unexpired patent and an applicant having a pending application in the Patent Office.

It follows, therefore, that an applicant, whose pending application for patent was filed in the Patent Office less than two years after the grant of a patent to another for the same invention, has an absolute right to have the question of priority determined as between him and the prior patentee, and if the applicant should prove to be the first inventor, he is entitled under the Statutes to the grant of a patent to him for such invention. Obvi-

ously this rule applies whether the applicant's application was filed earlier or later than the patentee's application.

This practice has been consistently followed by the Patent Office for more than forty years, and until the decision of the Court of Appeals of the District of Columbia in the case of *Rowntree* v. *Sloan,* its legality was unquestioned. (See *Rolfe* v. *Hoffman,* 26 App. D. C., 336, p. 340.) The Rowntree-Sloan decision, however, announced the novel doctrine that unless an applicant introduced into his application claims corresponding with those of an issued patent within *one* year from the grant of such patent, he was estopped from making such claims at all, thereby making the failure of an applicant to make claims corresponding to those of a patent within *one* year from the grant thereof operate as an abandonment by him to the patentee of the invention defined by such claims.

Not only is this doctrine entirely without foundation in law, but it is absolutely inconsistent with Section 4886, Rev. Stat. For example, under Section 4886, an inventor may put his invention into public use for any period less than two years, and may then file his application for and receive a valid patent for his invention, notwithstanding anything that may have been done by later inventors in the meantime. After the first inventor has put his invention into public use, and before he has filed his application for patent, a later inventor may apply for and receive his patent, and it is quite possible, and occasionally happens, that such later inventor may receive his patent more than a year before the first inventor makes his application, but, under Section 4886, the issuance of such patent to a later inventor in no way vitiates the right of the first inventor to receive his pat-

ent after he has duly established the priority of his invention.

It has also been established law for many years that an applicant for patent, at any time during the prosecution of his application, is entitled to make claims commensurate with his invention, and that such claims, when made, date back to the date of filing of his application. If made in a divisional application filed while the original application is pending, they relate back to the date of filing of the original, or parent, application, and *prima facie*, the date of filing of such original application is considered the date of making of the invention.

The rule is well stated by the Circuit Court of Appeals for the Second Circuit as follows:

> "The specifications in that application for 564,586, were full enough to warrant the making of the claims here in controversy (5 and 35). At any time the application might have been amended by adding such claims, and in our opinion it is immaterial that, instead of thus amending it, he took the broader claims on another application, filed while the first was pending. The second may fairly be considered a continuation of the first, and thus Berliner's application antedates the public use, and the facts will not sustain the contention that he abandoned his invention here in suit."

(*Victor Talking Mach. Co. et al.* v. *American Graphophone Co.*, 145 Fed., 350, p. 351.)

See also:

Auto. Weighing Mchne. Co. v. *Pneu. Scale Corpn.*, 166 Fed., 288 (C. C. A., 1st Cir.).

Lemley v. *Dobson-Evans Co.*, 243 Fed., 391 (C. C. A., 6th Cir.).

Sundh Elec. Co. v. *Interborough Co.*, 198 Fed., 94 (C. C. A., 2nd Cir.).

Von Recklinghausen v. *Dempster*, 34 App. D. C., 474.

Lotz v. *Kenny*, 31 App. D. C., 205.
Dunkley v. *Beekhuis*, 39 App. D. C., 494.
Cleveland Foundry Co. v. *Detroit Vapor Stove Co.*, 131 Fed., 853, pp. 857-8 (C. C. A., 6th Cir.).

Rule 116 of the Patent Office recognizes and applies this principle as follows:

> "Rule 116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts."

It also has been established law for many years that an applicant, in prosecuting his application for patent, is entitled to avail himself of the privileges allowed by the Statutes in responding to official actions by the Patent Office, and that the courts are without authority to disregard the statutory provisions in that regard. This precise question was considered by this court in the case of *U. S.* v. *Am. Bell Tel. Co.*, in which the validity of the Berliner patent was attacked on the ground that the prosecution of the application therefor had been unreasonably delayed. As it appeared in that case that the applicant had prosecuted his application in conformity with the Statutes and the Rules of the Patent Office, such objection was overruled. In the opinion, by Mr. Justice Brewer, the court says:

> "Neither can a party pursuing a strictly legal remedy be adjudged in the wrong if he acts within the time allowed and pursues the method prescribed by the statute. If the statute gives him five years within which to bring an action on a note, he cannot be denied the relief simply because he waits four years and eleven months. If he has two years after a judgment against him within which to take an ap-

peal, he may wait until the last day of the two years. Under Section 4886, Revised Statutes, an inventor has two years from the time his invention is disclosed to the public within which to make his application, and unless an abandonment is shown during that time he is entitled to a patent, and the patent runs, as any other patent, for seventeen years from its date. He cannot be deprived of this right by proof that if he had filed his application immediately after the invention the patent would have been issued two years earlier than it was, and the public therefore would have come into possession of the free use of the invention two years sooner. *The statute has given this right, and no consideration of the public benefit can take it away from him.* His right exists because Congress has declared that it should. It will not do to say that, because Congress has declared that seventeen years is the life of a patent, seventeen years is the limit of the possible monopoly; for the same legislation that gives seventeen years as the life of a patent gives two years within which an application for a patent may be made, and during that time, as well as while the application is pending in the Department, the applicant has practically, if not legally, an exclusive use. A party seeking a right under the patent statutes may avail himself of all their provisions, and *the courts may not deny him the benefit of a single one.* These are questions not of natural but of purely statutory right. Congress, instead of fixing seventeen, had the power to fix thirty years as the life of a patent. *No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public.* (*U. S.* v. *Am. Bell Tel. Co. et al.*, 167 U. S., 224, p. 246.)'"*

See also:

Crown Cork & Seal Co. v. *Al. Stopper Co.*, 108 Fed., 845, p. 851 (C. C. A., 4th Cir.).

Columbia Motor Car Co. v. *Duerr & Co.*, 184 Fed., 893, p. 895 (C. C. A., 2nd Cir.).

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* Italics ours in all cases unless otherwise noted.

Nevertheless, in the case at bar the Court of Appeals, despite the fact that its attention was directed both orally and by brief to the foregoing authoritative statement of the law, deliberately ignored it and assumed the right to deny, not only to petitioners, but also to all other applicants in like case, the benefits conferred by the statutes with respect to the right of asserting and establishing priority over a rival claimant.

It has also been long-established law that abandonment of an invention is a matter for strict proof, and not of presumption.

Saunders v. *Miller,* 33 App. D. C., 456; 146 O. G., 505.

Rolfe v. *Hoffman,* 26 App. D. C., 336, p. 340; 121 O. G., 1350.

International Telephone Mfg. Co. v. *Kellogg Switchboard & Supply Co.,* 171 Fed., 651.

McDuffee v. *Hestonville M. & F. Pass. Ry. Co.,* 181 Fed., 503.

The rule announced in the Rowntree-Sloan case and in the case at bar is inconsistent with all the foregoing established rules of law, and, if valid, its enforcement will revolutionize the long-established practice of the Patent Office.

It has always been the settled policy of the patent laws of this country to reward the first inventor who has availed himself of the rights and privileges conferred by those laws to disclose his invention to the public and obtain patent protection therefor. The rule announced in the Rowntree-Sloan case, however, is not in harmony with that policy, but imposes a grievous burden upon inventors in that it requires them, especially after making application for letters patent, to critically examine the claims of each and every patent that may be issued from time to time relating to the arts in which their inventions

respectively belong, in order that if any such patent perchance contains a claim that might interfere with the invention sought to be covered by an applicant, he may introduce it into his application for purposes of interference before all right of the applicant to such claim shall have been forever lost. The fact that the Official Gazette publishes only fragmentary drawings and only a few of the claims of most patents makes this burden practically insupportable.

Until the decision in the Rowntree-Sloan case, presumptive abandonment of an *invention* was in no case predicated on inaction short of two years, and the Court of Appeals evidently overlooked the well-settled rule of law that until an application matures into a patent no presumption of abandonment arises as to any subject-matter shown and described therein but not claimed. This is manifest from the reference by the court to the Statute relating to the amendment of applications. Section 4894 provides that failure of an applicant to prosecute his application within *one* year after any action therein, of which he shall have received notice, shall work an abandonment of the *application*, but it is well settled that such failure does not work an abandonment of an *invention*, and if a statutory bar has not intervened, the applicant may file a new application and obtain a valid patent.

In the case of *Western Elec. Co.* v. *Sperry Elec. Co.*, the Circuit Court of Appeals for the Seventh Circuit, Chief Justice Fuller and Circuit Judges Woods and Jenkins sitting, stated the law as follows:

> "There is a material difference between the abandonment of an invention and the abandonment of an application for letters patent thereon by failure to comply with section 4894 of the Revised Statutes. The first gives the invention to the public, and, once done, the act is irretrievable; but, besides the power

conferred upon the commissioner of patents to relieve an applicant from an abandonment of his application under the statute, an application, which has lapsed, or been rejected or withdrawn, may be renewed or repeated so long, we suppose, as the invention itself has not been abandoned by reason of a two-years public use or otherwise."

(*Western Elec. Co.* v. *Sperry Elec. Co.*, 58 Fed., 186, p. 191.)

To the same effect is the decision of the Circuit Court of Appeals for the Eighth Circuit in the case of *Hayes-Young Tie Plate Co.* v. *St. Louis Transit Co.*

"There is a wide difference between the abandonment of an invention and the abandonment of an application for it. An abandonment of an application is not necessarily an abandonment of the invention, and, after the application has been abandonded, a valid patent for the invention may nevertheless be secured upon a new application, provided the invention has not gone into public use or been upon sale for more than two years prior to the filing of the latter. In cases in which the first application has not been abandoned, subsequent applications and amendments constitute a continuance of the original proceeding, and the two years' public use or sale which may avoid the patent must be reckoned from the presentation of the first application, and not from the filing of subsequent application or amendments. *U. S.* v. *American Bell Telephone Co.*, 167 U. S. 224, 17 Sup. Ct. 809, 42 L. Ed. 144; *Colgate* v. *Western Union Tel. Co.*, Fed. Cas. No. 2,995; *Miehle* v. *Read*, 96 O. G. 426; *Thomson-Houston Electric Co.* v. *Winchester Avenue R. Co.* (C. C.), 71 Fed. 192, 73 O. G. 2155; *Godfrey* v. *Eames*, 1 Wall. 317, 17 L. Ed. 684; *Smith* v. *Goodyear Dental Vulcanite Co.*, 93 U. S. 486, 23 L. Ed. 952; *Cain* v. *Park*, 14 App. D. C. 42, 86 O. G. 797, 798; *Ex parte Stewart*, 4 O. G. 665; *Stirling Co.* v. *St. Louis Brewing Ass'n* (C. C.), 79 Fed. 80; *Dedrick* v. *Fox* (C. C.), 56 Fed. 714, 717; *Ligowski Clay-Pigeon Co.* v. *American Clay-Bird Co.* (C. C.), 34 Fed. 328, 333."

Hayes-Young Tie Plate Co. v. *St. Louis Transit Co.*, 137 Fed., 82.

The decision of the Court of Appeals for the Second Circuit in *Kinnear Mfg. Co.* v. *Wilson* is also in point.

> "It is well settled that an inventor by describing an invention in a patent granted to him, does not preclude himself from patenting it subsequently. His omission to claim what he describes may operate as a disclaimer or an abandonment of the matter claimed; but it has no such effect when it appears that the matter thus described but not claimed was the subject of a pending application in the Patent Office by him for another patent. This was so decided by this court in *Thomson-Houston Electric Co.* v. *Elmira Railway Co.* (C. C.), 71 Fed. 396, and for other adjudications it suffices to refer to *Suffolk Co.* v. *Hayden,* 3 Wall. 315, 18 L. Ed. 76, and *Barbed Wire Case,* 143 U. S. 275, 12 Sup. Ct. 443, 36 L. Ed. 154."

Kinnear Mfg. Co. v. *Wilson,* 142 Fed., 973.

Again, applications which have been allowed and have become forfeited for failure to pay the final government fee, may be renewed at any time within two years after the allowance of the original application, and, as provided in Section 4897, upon the hearing of renewed applications, abandonment is considered *as a question of fact.* No *presumption* of abandonment arises from mere lapse of time, but must be established by proof.

In the case at bar, the Court of Appeals does not hold that the Chapman and Chapman original application was abandoned by failure to prosecute it according to law, as there is no basis for any such contention. Neither does the court hold that Chapman and Chapman specifically abandoned the subject-matter incorporated in their divisional application. It clearly could not so hold, because, as shown by the record, their divisional application was filed while their original application was still pending, and, moreover, the claims made by Chapman and Chapman in their original application directed to the bearings of the pump shaft were withdrawn in deference

to a requirement for division made by the Examiner, with a specific reservation that they would be incorporated in a divisional application. The Court of Appeals, however, goes further and holds that while the *application* was not abandoned, the *invention* which formed the subject-matter of that application was abandoned, and in support of this inconsistent position, rules that the section of the Statutes relating to abandonment of invention must be disregarded and that Section 4894 which merely relates to abandonment of applications applies.

Abandonment of an *invention* is a much more serious thing than abandonment of an *application*. The Commissioner in his opinion referred to the question of reissue merely as showing by analogy that the courts in many cases have not regarded a delay of two years in applying for a reissue as establishing abandonment of the invention not claimed in the original patent, and in the same way he referred to Section 4886, which permits an applicant to file his application within two years after a patent has been granted to another for the same invention, or after it has been published, or put into public use, and works an abandonment of *invention* after a delay of two years.

His conclusion that—

> "the diligence of one who, having already filed, copies its claims within two years of the granting of a patent, cannot be inquired into without imposing a condition more strict than is imposed by Sec. 4886 upon one who does not file his application until after the rival patent has been granted,"

is entirely sound, and shows that the rule announced by the court in the *Rowntree-Sloan* case was much more drastic than the provisions of Sec. 4886, or the rule applied in reissue cases, and therefore, should not be adhered to. The application of that rule works an aban-

donment of the *invention*—not of the *application*, and moreover, leaves the applicant no opportunity to explain or excuse his delay, which, in the case at bar, was only such delay as Section 4894 permits, and this notwithstanding the fact that where an applicant has allowed his application to become abandoned by failure to prosecute within one year, he is expressly permitted to excuse his delay, and by doing so to the satisfaction of the Commissioner, may revive his application. It is the prerogative of Congress to prescribe the rules of procedure governing applications for patents, and where Congress has spoken, the courts, it is submitted, cannot disregard the plain meaning of the statute.

The Court of Appeals is evidently desirous of expediting the prosecution of applications for patents, and what it considered to be an abuse of the privilege of amendment in the Rowntree-Sloan case was no doubt the motive which impelled it to the announcement of the ruling in that case; but, as pointed out by this court in the case of *U. S.* v. *Am. Bell Tel. Co., supra,* the views of any court as to the wisdom of a public policy instituted and approved by Congress and legally enacted are immaterial. The courts are bound to follow the law as it exists, and they have no authority to change it. In the case of *Boston Store* v. *Am. Graphophone Co. et al.*, decided by this court March 4, 1918, Mr. Chief Justice White in delivering the opinion of the court said:

> "Moreover, so far as the argument proceeds upon the assumption of the grave disaster which must come to the holders of patent-rights and articles made under them from the future application of the doctrine which the cases establish, it must be apparent that if the forebodings are real the remedy for them is to be found not in an attempt judicially to correct doctrines which by reiterated deci-

sions have become conclusively fixed, but in invoking the curative power of legislation."

Boston Store v. *Am. Graphophone Co. et al.*, 249 O. G., 985, p. 988.

The rule announced in *Rowntree* v. *Sloan*, being clearly in contravention of the Statutes, should, therefore, be disapproved and overruled.

Second Question.

On an interference appeal from the Patent Office under the Act of February 9, 1893 (27 Stat. L., 434, Ch. 74), is the jurisdiction of the Court of Appeals of the District of Columbia confined to a determination of the question of priority of invention, and may the question of whether a statutory bar exists to the grant of a patent to the actual first inventor of the subject-matter of the issue be determined on such appeal?

This precise question was answered in the negative by this court in *Lowry* v. *Allen* as follows:

> "The statute is explicit. It limits the declaration of interferences to the question of priority of invention. Section 4904 provides that in case of conflict of an application for a patent with a pending application or with an unexpired patent (as in the case at bar), the Commissioner shall give notice thereof, 'and shall direct the primary examiner to proceed to determine the question of *priority of invention*' . . . We concur with the views expressed, that the statutes provide only for appeals upon the question of priority of invention. Appeals on other questions are left to the regulation of the Patent Office under the grant of power contained in Section 483."
>
> (*Lowry* v. *Allen*, 203 U. S., 476, p. 482.)

Obviously the existence of a statutory bar has nothing to do with the question of priority, and the Court of Appeals has itself repeatedly so held. See:

Norling v. *Hayes,* 37 App. D. C., 169 (pp. 177, 178), and cases therein cited.

Slingluff v. *Sweet & Spinasse,* 45 App. D. C., —; 230 O. G., 659.

Frost v. *Chase,* 37 App. D. C., 179.

The Court of Appeals, however, attempts to distinguish the present case from one involving a statutory bar on the ground that a question of laches and not one of a statutory bar is here involved. The court, as is apparent from the cases cited in the opinion, failed to appreciate the distinction between laches in completing an invention, and abandonment of a completed invention. Chapman and Chapman having reduced their invention to practice by filing their application for patent before Wintroath conceived the invention, laches could not enter into the question of priority as between the parties. Indeed, there could be no question of priority between them. The only question was whether or not Chapman and Chapman had abandoned the invention to the public. They certainly could not abandon it to Wintroath because he could not qualify under the Statute as the first inventor. If Chapman and Chapman had not abandoned the invention they were entitled to their patent, regardless of Wintroath's patent, and Wintroath does not enter into that question at all.

The decision of the Court of Appeals, therefore, in effect holds that that court has jurisdiction to consider the question of the statutory bar of abandonment on an interference appeal, notwithstanding the ruling to the contrary of this court in *Lowry* v. *Allen, supra.*

In *Bate Refrigerating Co.* v. *Sulzberger,* this court said:

"If Section 4887 of the Revised Statutes is so worded as to express clearly the intention of Con-

gress, the court must give effect to that intention. But even if the statute be not so explicit as to preclude construction; if upon applying to it the established rules of interpretation; if looking at it in the light of previous legislation on the subject; if there be reasonable ground for adopting either one of two constructions; this court, without departing from sound principle, may well adopt that construction which is in harmony with the settled practice of the executive branch of the government, and with the course of judicial decisions in the Circuit Courts of the United States; especially, if there be reason to suppose that vast interests may have grown up under that practice and under judicial decisions, which may be disturbed or destroyed by the announcement of a different rule."

Bate Refrigerating Co. v. *Sulzberger*, 157 U. S., 1, page 34.

The foregoing remarks apply specifically to the case at bar. The fact that the Patent Office and the courts have for more than forty years harmoniously interpreted and applied the Statutes bearing upon the facts of this case is sufficient ground for assuming that the practice so established is sound and should not be overturned. But the Court of Appeals of the District of Columbia has now taken a different and novel view of the law, and the authoritative relation sustained by that court to the Patent Office makes it of vital importance that this court consider the questions involved and finally determine the correct practice. It is, therefore, respectfully submitted that the writ prayed for should be granted.

Respectfully submitted,

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

May, 1918.

IN THE

SUPREME COURT OF THE UNITED STATES

MATTHEW T. CHAPMAN and
MARK C. CHAPMAN,
Petitioners,
vs.
JOHN A. WINTROATH.

October Term, 1918. No. 456.

Motion to Advance.

Now come Matthew T. Chapman and Mark C. Chapman, the petitioners in the above-entitled cause, by their counsel, and move that said cause be advanced for argument at an early date in accordance with the provisions of Paragraph 5, Rule 26, on the ground that the questions presented therein for determination concern the administration of the Patent Office of the United States and involve matters of general public interest, to-wit, whether or not an applicant for a patent is estopped from making claims of a patent for interference purposes after the expiration of one year from the date of issue of the patent.

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

SUPREME COURT OF THE UNITED STATES.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN, *Petitioners,* vs. JOHN A. WINTROATH.

October Term, 1918. No. 456.

Stipulation.

Whereas counsel for the respondent do not object to the granting of the accompanying Motion to Advance, it is stipulated by counsel for the parties to the above entitled cause that said motion may be submitted to the Supreme Court of the United States at the convenience of counsel for the petitioners without further notice.

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

PAUL SYNNESTVEDT,
HARVEY L. LECHNER,
Counsel for Respondents.

In the Supreme Court of the United States.

OCTOBER TERM, 1918.

MATTHEW T. CHAPMAN AND MARK C. Chapman, petitioners,
v.
JOHN A. WINTROATH.

No. 456.

ON WRIT OF CERTIORARI TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

SUGGESTION BY THE UNITED STATES.

Comes now the Solicitor General on behalf of the United States and respectfully submits to the court the following suggestion in connection with petitioners' motion to advance the above entitled case for early hearing:

While the Government is not a party to this case it respectfully calls the court's attention to the fact that the same presents a question of public interest, namely, the rule or practice to be pursued by the Patent Office in determining the question of priority in interference proceedings pending before it; also the further question as to whether section 4886 or section 4894 of the Revised Statutes lays down the true rule or practice in such cases.

98343—19

Numerous applications for patents are now pending in the Patent Office upon which action has been suspended awaiting a decision in the instant case.

The Department of the Interior at the suggestion of the Commissioner of Patents has requested ~~that~~ that application be made for an early hearing of the case.

ALEX. C. KING,
Solicitor General.

JANUARY, 1919.

○

MATTHEW T. CHAPMAN and MARK C. CHAPMAN,

Petitioners,

vs.

JOHN A. WINTHROATH

BRIEF OF AMICUS CURIAE

JOHN C. CONNER,
DEAN S. EDMONDS,
CHARLES J. O'NEIL,
Counsel for Amicus

Supreme Court of the United States.

October Term, A. D. 1919.

No. 117.

MATTHEW T. CHAPMAN and MARK C. CHAPMAN,
Petitioners,

vs.

JOHN A. WINTROATH.

BRIEF FOR FULLER ENGINEERING COMPANY, AS AMICUS CURIAE.

The Fuller Engineering Company of Allentown, Pa., requests leave to file the following memorandum in support of the appeal taken herein.

At the outset, we wish to emphasize the far-reaching character of the estoppel which has been applied by the Court of Appeals of the District of Columbia in this case. It extends to and vitally affects the patent rights of many inventors and many investors in inventions. If sustained, it will unquestionably deprive of patent protection many inventors whose claim to the credit of their inventions could readily be established. In particular, we wish to point out that though the case at bar involves a consideration of so-called divisional applications for patents, the principle of estoppel here under review is in no way limited to cases in which such divisional applications are involved.

If the administration of the Patent Office could and did attain the perfection which is its constant aim, this doctrine of estoppel would be of little consequence. A situation in which it would be applicable would present itself but seldom and in those rare instances the application of the estoppel would probably operate to the ultimate good of the majority of those concerned. But that degree of perfection cannot be attained, as will be admitted by those who, like ourselves, look upon the administration of the Patent Office with a strong feeling of pride. Under such a perfect fulfillment of its functions by the Patent Office, it would seldom or never occur that an applicant for patent would have occasion to present in his application a claim of a patent which had been issued more than a year. Before the patent issued, officials of the Patent Office would note that there were two applicants soliciting patents for the same invention, and would institute an interference proceeding to determine which of the two applicants was the first inventor.

But long experience shows that it is impossible for the Patent Office to detect all instances of interference between co-pending applications for patents. The great number of applications filed in the Patent Office is one reason for this. Another is that the same invention is often embodied by two applicants for patents in mechanisms which are just enough different as to their uses to cause the two applications to be assigned to different Examiners in the Patent Office. Whatever the cause, it frequently happens that a patent is issued containing claims for an invention claimed by another whose application for patent was pending in the Patent Office concurrently with the application for the patent which was granted.

Under such circumstances, the applicant for patent, or his attorney, certainly should note the issuance of the patent claiming the invention; and he should forthwith demand an interference proceeding to determine the issue of priority between him and the patentee. But he does not always do so. Here again it is the great number of patents that are issued and the different forms in which the same invention may be embodied that are responsible for what might seem to be an inexcusable oversight. As a result, it might easily be and frequently is the case that the existence of the patent does not become known to the applicant until after the lapse of a year from the date of issue of the patent. Under such circumstances, the ruling of the Court of Appeals of the District of Columbia would deny to the applicant the right to present in his application the claims appearing in the patent and to contest an interference with the patentee to determine the ownership of the invention. We believe this would work a great injustice to the applicant and to the public; to the applicant because he would be prevented from obtaining adequate protection for his invention, and to the public because they would be made to pay tribute under a patent to one who was not the first inventor of the invention patented. To illustrate how this injustice could occur, we shall refer briefly to three cases in which this estoppel would be applicable. All three of these are typical of cases actually presented in connection with applications now pending before the Patent Office.

(1) A valuable invention was made by A, living in Boston, in 1916. Appreciating the value of his invention, A placed it upon the market at once, beginning in the district about his home

and spreading out gradually from there. By the end of the year 1916, A was satisfied that his invention was of value, and he filed an application for patent covering it. Early in 1917, B, living in San Francisco, made the same invention quite independently of A, and feeling that he did not care to exploit it unless he could get a patent covering it, he filed an application for patent immediately. By the middle of 1917, a patent was issued to B for the invention, the speedy issuance of B's patent being due to the fact that his application was free from any formal defect and was prosecuted vigorously. Of course the Patent Office should not have granted B's patent; the Examiner in charge of these applications should have noted that they were directed to the same invention and should have declared an interference between them to determine the issue of priority. The issuance of B's patent escaped the attention of A and his attorney until after a year had elapsed following the issuance of B's patent. Then when A learned of B's patent he perceived at once that the Patent Office had issued the patent improperly, that the application for B's patent had been filed subsequent to the filing of A's application, and that A had made the invention many months before he filed his application, so that in all probability, he, and not B, was the first inventor. The natural thing for A's attorney to do in such circumstances, and the thing which would have been done by any attorney conversant with the patent practice which has been followed in the Patent Office for generations back, would be to file in the patent an amendment of A's application requesting the insertion in that application of the claims of B's patent, stating in connection with the amendment that the claims were copied from the patent. This would call

to the attention of the Examiner his oversight in granting B's patent, and he would forthwith declare an interference between the patent and the application. In such an interference, the issue of priority of invention would be tried out, and if A were found to be the prior inventor, he would be granted a patent containing claims which were duplicates of the claims in B's patent. There would then be two patents outstanding for the same invention, but the record of the interference in the Patent Office would be available to the public for the purpose of ascertaining which of the two patents was valid. And either patentee could proceed against the other under Section 4918 of the Revised Statutes for the purpose of securing cancellation of his opponent's patent.

Under this doctrine of estoppel which has been announced by the Court of Appeals of the District of Columbia, this action of A in presenting the claims of B's patent in A's application and having an interference declared to determine the issue of priority would not be permitted. Instead, B's patent would appear to be the patent for the invention, although A had made the invention, and had put it upon the market long before the invention was made by B. Anyone familiar with A's commercial exploitation of the invention in 1916 could successfully defend against a suit brought by B for infringement of his patent. But A, the real inventor, would be deprived of protection for the invention afforded by claims in the form of the claims presented by B, and might be wholly unable to secure adequate protection for the invention under claims in the form of those originally presented by him in his application for patent. Thus protection would be denied to the true inventor and the public might be made to pay tribute under the patent

to B who was entitled to nothing because he was not the first inventor, or might be forced to contest a suit for infringement brought by B.

(2) A valuable invention was made by C who disclosed it to D, either inadvertently or in the effort to secure D's cooperation in exploiting the invention. D, who had invented nothing, filed an application for a patent covering the invention without informing C of it. A patent was granted to D. C did not know of D's application for the patent, nor did he become aware of the issuance of D's patent, but in his effort to obtain protection for the invention, he himself filed an application for patent. More than a year from the issuance of D's patent elapsed before C became apprised of the issuance of the patent, but immediately upon learning of it, C realized that it was he who had communicated the invention to D, and that D had practically stolen the invention from him. Under this doctrine of estoppel announced by the Court of Appeals of the District of Columbia, C would be denied any remedy through interference proceedings in the Patent Office. He would not be permitted to present in his pending application the claims of D's patent, and therefore would not be permitted to contest an interference proceeding with D. Furthermore, if this doctrine of estoppel were approved by the Supreme Court, C would have no remedy in a District Court under Section 4915 of the Revised Statutes. He would be dependent for protection upon such claims as he had presented in his application for patent prior to the end of the year from the grant of D's patent. Indeed, such a situation as that above outlined might be presented in which C's application was not even filed until after a year from the grant of D's

patent, although C's application was filed within the statutory period of two years after C had placed his invention on the market. In such circumstances, C would have no remedy whatever and would be wholly deprived of any form of protection for his invention, whereas D who had invented nothing but had patented an invention communicated to him by C, would have a patent which would be beyond attack from anyone not informed of D's duplicity.

(3) A valuable invention was made by E early in 1917 in some art like wireless telegraphy in which the services of experts were of the greatest value to this country in the conduct of the European War. Shortly after E had filed an application for patent covering his invention, he answered the call of his country and was sent to France; and his attorney, who was equally patriotic, volunteered his services and was sent to Washington for service in the War Department. While they were so engaged in their patriotic work, an application for patent for the same invention was filed by F, a patent was issued to F for the invention, and E and his attorney did not become aware of F's patent until after a year from the grant of that patent had elapsed and after they had concluded their war service and had returned to their former occupations. The doctrine of estoppel as announced by the Court of Appeals of the District of Columbia would then prevent E from presenting in his application the claims of F's patent and from contesting with F an interference proceeding designed to determine who made the invention first. The enforcement of the estoppel in such a case might operate to deprive E partially or entirely from protection in the invention made by him and put him to

great expense in defending a claim of infringement of F's patent, and the cause of all this would be found in the fact that E was patriotic and gave his services to his country, whereas F was selfish and devoted the months of the war wholly to his own interests.

Section 4886 of the Revised Statutes specifically provides that an inventor may defer filing an application for patent for his invention for two years after placing his invention upon the market. The estoppel here under review would, in some cases, operate to completely nullify the provisions of the Statute. Suppose an inventor did take advantage of this provision by waiting until two years after placing his invention on sale before filing his application for patent and that in the first of those two years a patent was granted to another for the same invention. When the application of the true inventor was filed and came before the Patent Office for examination, it would be met with a rejection based on this estoppel; the applicant would be told that he could not have a patent, notwithstanding the fact that he was the first inventor and had complied with the requirements of the Statutes, because more than a year earlier a patent had been granted to someone else who was not the first inventor. This would be true even if the first patentee had derived all his knowledge of the invention from the first inventor. Thus a Statute of the United States would be made to give way to a ruling of a Court.

It is sometimes attempted to justify this doctrine of estoppel announced by the Court of Appeals of the District of Columbia on the ground that it will force applicants for patents to prosecute their applications more vigorously. Doubtless the Court of Appeals of the District of Col-

umbia has had many applications for patents brought before it which had been pending in the Patent Office for many years. It may be freely agreed that applications should not be allowed to pend so long. If an application may be filed at any time within two years after the invention is made and put into use, as is permitted under Section 4886 of the Revised Statutes, and if the application pends in the Patent Office for say six years, and if the patent then granted runs for seventeen years, it is evident that the monopoly secured by the patent does not terminate until twenty-five years after the invention was made. It may be admitted that a continuance of the monopoly over that period is unjust to the public and was not contemplated when our patent laws were framed But the law as it now stands permits an inventor to defer applying for a patent for two years. Also, the law as it is now framed permits an applicant for a patent to defer for one year the filing of a reply to a rejection of his application by the Patent Office. If those provisions of the law permit a course which is unjust to the public, the change should be made by legislation and not by the judiciary branch of our government. Prior to 1898, the law permitted an applicant for patent to defer for *two* years the filing of a reply to a rejection of his application by the Patent Office. In time it became recognized that this provision of the law permitted of abuse which caused applications for patents to pend in the Patent Office for ten years or even more. The remedy for this situation was applied in the only proper way, by a change in the law which reduced the time permitted to an applicant for reply to a Patent Office rejection from two years to one year. If the abuse which was possible to 1898 is still possible in a less

degree, the change necessary to prevent it should be made in the same way, that is by change in the law to further reduce the period of time allowed for reply to rejections by the Patent Office. In like manner, if it be found advisable to preclude an applicant for patent from inserting in his application the claims of a patent which had been issued for more than a year, the doctrine of estoppel announced by the Court may be enacted into law by the legislative body. But the enforcement of the estoppel by the Court while it is not embodied in the patent law of the country is judicial legislation and as such should not be approved.

Respectfully submitted,
PENNIE, DAVIS, MARVIN & EDMONDS,
Solicitors for Fuller Engineering Company.

JOHN C. PENNIE,
DEAN S. EDMONDS,
CHARLES J. O'NEIL,
Of Counsel.

New York, N. Y. December 9, 1919.

FILED
DEC 15 1919
JAMES D. MAHER,
CLERK.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1919.

No. 117.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN,
Petitioners,

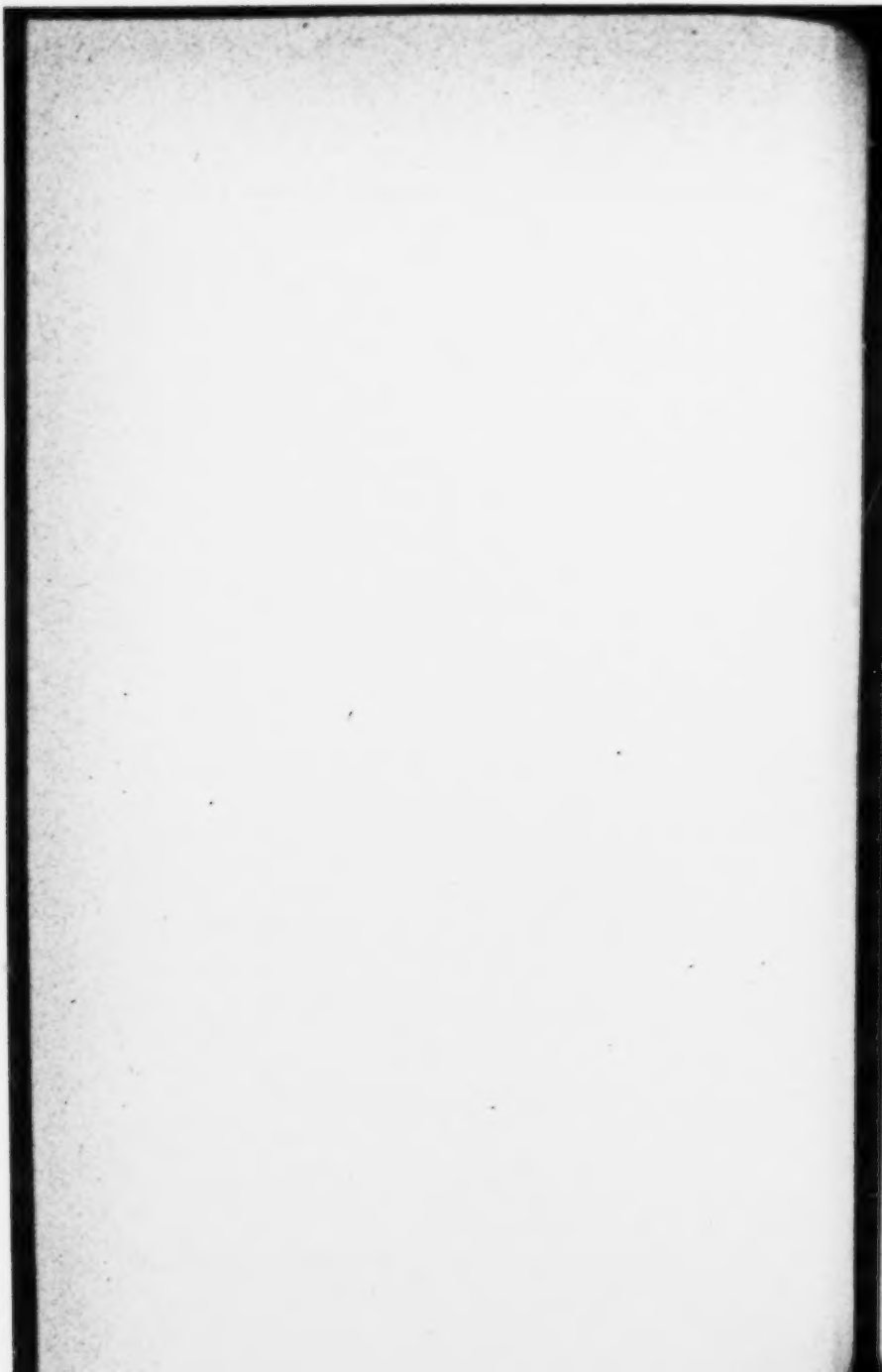
v.

JOHN A. WINTROATH,
Respondent.

MOTION FOR LEAVE TO FILE BRIEF, AS *AMICUS CURIAE*, AND BRIEF.

MELVILLE CHURCH, ESQ.,
Washington, D. C.

PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.



IN THE

Supreme Court of the United States

OCTOBER TERM, 1919.

No. 117.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN,
Petitioners,

v.

JOHN A. WINTROATH,
Respondent.

Gentlemen:

Take notice that on Monday, December 15, 1919, on the opening of the Court on that day, or as soon thereafter as counsel may be heard, I shall submit the accompanying motion for leave to file the accompanying brief, as *amicus curiae*, in the above-entitled cause. You are invited to present, at that time, your objections to the granting of such motion, if any you have.

MELVILLE CHURCH.

To
JOHN L. JACKSON,
ALBERT H. ADAMS,
A. V. CUSHMAN,
Counsel for Petitioners,
PAUL SYNNESTVEDT,
Counsel for Respondent.

Service acknowledged this 9th day of December, 1919.

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

PAUL SYNNESTVEDT,
Counsel for Respondent.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1919.

No. 117.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN,
Petitioners,

v.

JOHN A. WINTROATH,
Respondent.

MOTION

And now comes Melville Church, in his own proper person, and moves for leave to file the accompanying brief, as *amicus curiae,* in the above-entitled cause.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1919.

No. 117.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN,
Petitioners,

v.

JOHN A. WINTROATH,
Respondent.

BRIEF FILED BY MELVILLE CHURCH, ESQUIRE, AS *AMICUS CURIAE.*

I. The question of far-reaching importance, in this case, may be put thus:

> Is an applicant for a patent barred of his right to a patent simply because a patent for the same invention had already been granted and issued to another more than one year before he applied?

II. Upon the proper answer to this question depends the fate of a large number of applications for patents now involved in contested proceedings in the Patent Office and in the Courts, and of a still larger number of applications that stand rejected.

III. (*a*) In the interference case of Wells & Hunter vs. Honigmann, now pending in the Court of Appeals of the District of Columbia and designated as Patent Appeals Docket No. 1257, relating to improvements in Printing Presses, and in which the writer of this brief appears as counsel for the appellants, the Commissioner of Patents, applying the doctrine laid down by the Court of Appeals of the District of Columbia, in Rowntree vs. Sloan, 45 App. D. C., 207, and in Wintroath vs. Chapman & Chapman, 47 App. D. C., 428 (the case at bar), held that the grant of a patent to Honigmann, on October 7, 1913, upon an application filed by him December 26, 1911, barred the grant of a patent to Wells & Hunter, because, although the application of Wells & Hunter was filed December 6, 1907, the literal claims of the Honigmann patent were not made by Wells & Hunter until 17 months after the issue of the Honigmann patent. That case, upon motion of appellants, has been, by order of the Court of Appeals, put at the foot of the calendar of January Term, 1920, to await the decision of this Court in the case at bar.

(*b*) In the interference case of de Ferranti vs. Harmatta, relating to improvements in Electric Welding, now pending before the Commissioner of Patents, in person, and in which the writer of this brief appears for the appellant, the Board of Examiners-in-Chief has ruled that, although de Ferranti's date of invention is May 25, 1903, by virtue of a British patent granted to him on that date, while Harmatta's date of invention is December 3, 1903, de Ferranti is, nevertheless, barred from the right to a patent because he did not make the literal claims in interference until December 6, 1910, or about 17 months after the issue of a patent containing such claims to one Rietzel, *a third party not involved in the interference*, on July 20, 1909.

Upon motion made to the Commissioner in that case an

order has been entered postponing the hearing before him for 60 days, to await the determination of this Court in the case at bar, settling the point of law involved.

(c) In the case of Thomson Spot Welder Company vs. Ford Motor Company, now pending in the United States District Court, for the Eastern District of Michigan, Southern Division, which is a suit brought for the infringement of the Harmatta Electric Welding patent, and in which the writer of this brief appears as counsel for the defendant, there are involved the same issues of priority and right to patent predicated of the work of de Ferranti that are involved in the interference case of de Ferranti vs. Harmatta, pending in the United States Patent Office, last above noted. In that suit there has been a final hearing and the Court now has the case under advisement, but will doubtless withhold its decision until the determination of the critical point of law referred to in the case at bar.

IV. From the above few instances of many that might be brought to the attention of the Court, this Court may gain an idea of the far-reaching importance of the question it has before it, and of the vital interest which the clients of the writer of this brief and a larger number of others have in the proper determination of such question.

V. The necessary and inevitable effect of the new doctrine announced by the Court of Appeals of the District of Columbia, of which complaint is made, is to add a new bar to the grant of a patent which the statute not only does not provide, but which it plainly negatives.

The statute very explicitly states the necessary prerequisites to the grant of a patent:

> "Sec. 4886. Any person who has invented or discovered any new and useful art, machine, manufacture,

> or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fee required by law, and other due proceedings had, obtain a patent therefor."

VI. It appears by plain implication from a reading of this statute that an applicant may

> (*a*) put his invention into public use or on sale for full two years before applying for his patent; or
>
> (*b*) delay applying for full two years after the patenting or publication of the invention in this or any foreign country,

without being barred of his right to a patent.

VII. To hold, therefore, that the mere grant of a patent to another *one year* before he applies shall itself constitute a bar to an applicant is to, in effect, deprive an applicant of his two-year period of permissive public use and of his two-year permissive delay in applying after patenting or publication in this country or elsewhere, accorded him by the statute, with the result, that not only is a new prerequisite to the grant of a patent created, but two permissions guaranteed by the statute are taken away.

Such an attempt at judicial legislation it is not thought will be tolerated by this Court.

VIII. The other ramifications of the question are so exhaustively and admirably treated in the brief filed by the petitioners that they will not be further discussed herein.

The main purpose of this interposition will have been served if the Court is impressed with the far-reaching importance of the change that has been wrought by the rulings of the Court of Appeals of the District of Columbia, complained of.

MELVILLE CHURCH.

Dec. 4, 1919.

IN THE

Supreme Court of the United States,

October Term, 1919. No. 117.

MATTHEW T. CHAPMAN AND MARK C. CHAPMAN,

Petitioners,

v.

JOHN A. WINTROATH.

MEMORANDUM IN ANSWER TO BRIEF FILED, AMICUS CURIAE, BY MR. MELVILLE CHURCH.

May it please the Court, in reply to the brief filed "amicus curiae" by Mr. Church, counsel for Wintroath begs leave to submit this memorandum.

The statement of the issue here involved as given at the beginning of Mr. Church's brief is incorrect, and is based on a misconception as to the facts in the instant case. It treats the Chapman application as if it were a *new* case, while the fact is, it is not. It would have no standing whatever as such, on Chapman's own showing, but must be considered as a continuing application based on the original case in order to get the benefit of the early filing date.

The record shows the following facts: Wintroath filed his application December 2, 1912, and about a year later (November 25, 1913), he secured the issue of his patent having the claims here in controversy. He put the invention into commercial use. Over two years after he obtained his patent he received a declar-

ation of interference with Chapman & Chapman which, it developed, was based upon a case containing, among others, three claims which had been taken bodily from Wintroath's patent twenty months after its issue and publication, the Chapman application being filed, not as a new case, but as a division or continuation of an old application filed March 10, 1909, which, at the time of the declaration of interference, had been in the Patent Office seven years.

Examination of the file history of this old Chapman application discloses the fact that it contained some twenty-three figures showing various parts of an entire pumping apparatus largely relating to the pump runners, tubes, casings, and other parts not involved in this interference. The invention here in controversy happened to be illustrated in association with other parts in figure 12, but it appears in none of the other twenty-three figures. As the case was originally filed it contained some thirty-four claims covering a great variety of improvements, but no claim at all corresponding to the issues herein. (See Commissioner's Decision, Record, p. 73.)

By an amendment of April 21, 1911, one of the claims (Record, p. 101), was amended so as to be readable upon the subject matter shown in figure 12 without, however, involving the issue of the interference. In response to this amendment, on May 11, 1911, more than two years after the case was filed (Record, p. 103), the Patent Office notified Chapman that this claim, numbered 5 (Record, p. 103), was directed to subject matter shown in figure 12, and that such subject matter was examinable in another division, and division was "therefore required." In response to such action, on April 8, 1912, Chapman by amendment (Record, p. 104), canceled out the said claim, stating that he reserved the right to "file a separate application for the subject matter."

Nothing, however, was done with the subject matter of figure 12 until he filed his divisional application in which, for the first time, were introduced claims involving the issue of this interference certain of which were taken bodily from Wintroath's issued patent over *three* years after the cancellation, and over *four* years after he had been definitely advised by the Patent Office of the requirement of division, and then only after Wintroath's patent had been issued and published for twenty months, and after Wintroath had his apparatus in commercial use and, according to Chapman's own argument (see our Main Brief, p. 13), after he himself had had the invention in public use considerably more than two years.

The statute which must be primarily considered in ruling upon the above facts is clearly the one (section 4894) which outlines the duties and responsibilities of a party claiming rights under a pending or continuing application.

The Patent Office throughout has treated the Chapman divisional application as a continuation of the earlier case. That was in accordance with its established rules and precedents. Under well-settled practice a rule was entered against Wintroath to show cause within thirty days why judgment should not be rendered in favor of Chapman on his record date (see Record, pp. 56 and 57), even before Wintroath made his motion (Record, p. 62), sustained by the Court of Appeals, for judgment against Chapman based on Chapman's lack of diligence, working estoppel and abandonment of his application by failure to comply with the requirements of the statutes covering the prosecution of pending applications.

Section 4894 of the statute is as follows:

"All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in

> default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable."

Careful study of the above shows that it contains two parts or divisions, both directly applicable to the state of facts in the instant case.

In the first place it requires that, after filing an application, it "shall be completed and prepared for examination within one year after the filing of the application" or else the case will become "abandoned" unless the Commissioner of Patents shall be satisfied a longer delay was "unavoidable."

In the instant case the application as first filed, March 10, 1909, showed the invention in Fig. 12, but contained no claims to the subject matter in issue until six years afterward, when the divisional application was filed. Furthermore, in connection with a claim amended April 21, 1911, and numbered 5, which happened to be readable specifically upon this figure 12, the Patent Office said that it was examinable in a different division and "division is therefore required." But after this requirement and the subsequent cancellation of said claim, as above pointed out, nothing was done with respect to the subject matter of Fig. 12 until the filing of Chapman's divisional application *twenty* months after the issue of Wintroath's patent.

Thus, the application was not "perfected" in any respect as to said Fig. 12 until more than two years after it was filed, which clearly, under the precise language of section 4894, rendered the case as to such invention of Fig. 12 "abandoned."

The statutes, section 4888, require that an appli-

cant shall "~~partially~~ particularly point out and distinctly claim" the invention which he seeks to cover. An application without such claim is no more completed than it would be without an oath or with a defective specification or drawing which the Patent Office rejected.

As to the second part of section 4894, it is clear, from study of the above-recited facts, that here also Chapman has not met the requirements. The statute requires that the applicant shall, within one year after "any action" of which "notice shall have been given to the applicant" prosecute the application, or else the case shall "be regarded as abandoned," unless he shall satisfy the Commissioner of Patents that the longer delay was "unavoidable."

In the instant case the Patent Office (Record, p. 103), required that the claim, based on Fig. 12, be divided as it was only patentable, if at all, in a separate application. The claim referred to was then canceled out, and no action whatever taken as to said Fig. 12 until more than *four* years after the rejection, and *three* years and three months after the cancellation. As to such Fig. 12, therefore, the case plainly became abandoned under the express terms of the statute.

Of course, the statute provides only for abandonment of the "application" which is not in all cases equivalent to abandonment of the *invention*, because where there is no bar of two years' public use or other intervening obstacle, a new and independent application can be filed, but in such case the new application would stand on an entirely different basis from a divisional or continuing application and, in the instant case, would not be possible because of the bar of two years' public use admitted in Chapman's own argument.

Plainly, Chapman, in the instant case, is in the

untenable position of trying to save his case by urging, on the ~~other~~ one hand, that his divisional application is to be treated as it has been by the Patent Office, as a continuation of his early-filed case and, on the other hand, by seeking to avoid the embarrassments of the one-year prosecution statute by asking to have his case treated as if it were a new application.

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where the identical claims of such interference were not made by the applicant until more than one year after the patent containing them was granted to the other party. In the instant case the importance of this question is emphasized by the fact that so far as actual priority is concerned it is conclusively determined in favor of Chapman and Chapman by the records of the Patent Office, because Wintroath admits in his sworn preliminary statement that his date of conception of the invention at issue was eighteen months *later* than the filing date of Chapman and Chapman's original application which fully discloses the subject-matter of the interference.

In the case at bar Chapman and Chapman are applicants, and Wintroath is a patentee, and the interference is between the Wintroath patent and a divisional application filed by Chapman and Chapman one year and eight months after Wintroath's patent was issued. The official dates are as follows:

Wintroath's patent was issued November 25, 1913 (Rec., pp. 37-46).

Chapman and Chapman's divisional application containing the claims of the interference was filed July 6, 1915 (Rec., p. 37).*

Chapman and Chapman's original application fully disclosing the subject-matter of the interference was filed March 10, 1909 (Rec., p. 79).

Wintroath's claimed date of conception is October 1, 1910 (Rec., pp. 55-56).

Wintroath's application was filed December 2, 1912 (Rec., p. 4).

The Court of Appeals, following the rule announced by it in the recent case of *Rowntree* v. *Sloan,* 45 App. D. C., 207, held that because Chapman and Chapman did not make the precise claims of the interference issue

* Paging is confused. See folio 47.

within one year from the date of the Wintroath patent they were estopped to make such claims at all, and accordingly rendered judgment of *priority* in favor of Wintroath, notwithstanding the fact that by his own admission he was not the first inventor of the subject-matter of the interference.

The second question, as it arises in this case, relates to the jurisdiction of the Court of Appeals of the District of Columbia on interference appeals where no question of priority remains undetermined, to consider and determine whether or not a statutory bar exists to the grant of a patent to the acknowledged prior inventor.

In the decision under review the Court of Appeals, notwithstanding the question of actual priority of invention was foreclosed by Wintroath's own admission, held that it had jurisdiction to hear and determine Chapman and Chapman's right to a patent, and in effect held that they had abandoned the invention of the issue *to Wintroath* because of their supposed laches in not having made the claims of Wintroath's patent within one year after that patent was issued.

Summary of Facts.

There is no controversy as to the facts, which are as follows:

Wintroath's application was filed December 2, 1912, and matured into letters patent No. 1,079,679 on December 25, 1913 (Rec., pp. 34-36).

On July 6, 1915, Chapman and Chapman filed their application for patent serial No. 238,254 as a division of their application serial No. 482,517, filed March 10, 1909, *which was then pending in the Patent Office* (Rec., pp. 37-52).* Said divisional application described and

* Paging is confused. This refers to paging beginning with folio 47.

claimed certain subject-matter originally included in said parent application serial No. 482,517, but the claims for which were required to be withdrawn therefrom and made the subject-matter of a separate application (Rec., pp. 118 and 120). Under the practice as it has been established for many years such divisional application related back to and was entitled to date as of the filing date of said parent application. The precise claims of the interference issue were made in such divisional application as filed (Rec., p. 41), which was about one year and eight months after Wintroath's patent containing them was issued.

Although Chapman and Chapman's original application serial No. 482,517 was pending in the Patent Office at the time Wintroath's application was filed and his patent issued, no interference was declared by the Commissioner between the Wintroath application and the Chapman and Chapman original application. The latter application did not contain the precise claims of the interference issue, but it did contain broader claims which dominated that issue, and it was regularly prosecuted according to the statutes and the rules of the Patent Office, and was never abandoned or forfeited. It finally matured into letters patent No. 1,649,633, dated August 10, 1915 (Rec., pp. 78-132).

On March 21, 1916, an interference was declared between the Chapman and Chapman divisional application, serial No. 238,254, and the Wintroath patent (Rec., pp. 53-54). The subject-matter of said interference is defined in claims 2, 3 and 4 of said Wintroath patent, and claims 1, 2 and 3 of the Chapman and Chapman application. It is unnecessary to consider these claims in detail, as it will suffice to say that the invention is the combination with the power shaft of a deep-well pumping mechanism, of a fluid-operated bearing which supports

said shaft, and an auxiliary bearing for sustaining resultant downward thrust of the power shaft. The Chapman and Chapman original application, as filed, *illustrated and described* said subject-matter, and contained claims for *each* of the bearings combined with the power shaft, but it contained no claims for the combination of *both* bearings with the power shaft, and claims for such specific combination were not made by them until they filed their divisional application on July 6, 1915.

The usual preliminary statements were filed by both parties, and in his preliminary statement (Rec., pp. 55, 56) Wintroath declared that he conceived the invention contained in the claims of his said patent on or about the first day of October, 1910, which was more than one year and six months *after* Chapman and Chapman's original application, fully showing and describing said invention, was filed in the Patent Office. In view of the fact that Wintroath's date of conception of the invention was later than Chapman and Chapman's filing date the case did not reach the stage where either party was permitted to take any testimony, and under Rule 111* Chapman and Chapman's preliminary statement was not opened for publication.

On May 5, 1916, in accordance with Rule 114* of the Patent Office, the Examiner of Interferences served notice on Wintroath that judgment on the record would be entered against him unless he should, within 30 days, show sufficient cause why such action should not be taken (Rec., pp. 56, 57).

On June 21, 1916, after having filed certain motions which are not material here, Wintroath moved for judgment on the record in his favor on the ground that Chapman and Chapman were estopped from making the claims

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* See foot note, p. 18.

of the issue; that the facts which raise the estoppel also work an abandonment, and that to award the claims to Chapman and Chapman would, under the facts, be against public policy (Rec., pp. 62, 63).

This motion was based entirely upon the then just published decision of the Court of Appeals of the District of Columbia in the case of *Rowntree* v. *Sloan* (227 O. G., 744; 45 App. D. C., 207), in which it was held that "*Sloan's laches, in failing within a reasonable time after the issuance of the Rowntree patent to make these claims, estopped him to make them at all. . . . If he thought these claims read upon his application, it was his duty promptly to make them, at least within the time allowed for amendment after Office action* (one year), *and his failure to do so is fatal to his present contention.*"

The Examiner of Interferences, in deciding Wintroath's motion for judgment in his favor, held that the doctrine of *Rowntree* v. *Sloan* applied, and awarded priority to Wintroath, *notwithstanding the fact that the records of the Patent Office showed that he was not the first inventor of the subject-matter of the interference* (Rec., pp. 64 to 68, inc.).

Chapman and Chapman accordingly appealed to the Board of Examiners-in-Chief (Rec., pp. 68-70), who affirmed the decision of the Examiner of Interferences on the ground that they were bound by the decision of the Court of Appeals in the Rowntree-Sloan case, and did not feel that they were authorized to set aside the practice instituted by that decision (Rec., pp. 70-71).

Chapman and Chapman thereupon appealed to the Commissioner of Patents (Rec., p. 72), who reversed the decision of the Board of Examiners-in-Chief and the decision of the Examiner of Interferences, and awarded priority of invention to Chapman and Chapman. In deciding the case (Rec., pp. 73-75) the Commissioner said:

"To establish a fixed limit of one year after which claims may not be copied from a patent presents two serious difficulties.

"In the first place, an applicant who has waited more than one year to amend his application may save his rights by showing to the Commissioner that the delay was unavoidable (Revised Statutes, Section 4894). Moreover, generally speaking, laches is a charge which is rebuttable unless the delay exceeds a period specified by statute. No matter what period be taken it seems clear, therefore, that the right to explain the delay must be granted to the applicant.

"In the second place, an inventor after another has patented the invention may wait up to two years before filing his own application therefor (Revised Statutes, Section 4886). Since the making of a claim is a mere incident to the patenting of an invention, a patent could not be denied on any theory of laches in such a case.

"No reason is seen why a stricter rule should be laid down to regulate the conduct of an inventor who has already filed his application at the time when a rival patent is granted than would be applied to one who filed after the rival patent was granted.

"In the Rowntree-Sloan case the question whether the limit of time should be set at one year or two years was not directly involved and therefore presumably was not considered as fully as it would have been had it been necessary for the disposition of the case.

"I am persuaded that on further consideration the Court of Appeals instead of selecting the time allowed for amendment by Section 4894 will follow Section 4886, making the time two years.

"The limit of two years would also be supported by analogy with the treatment of reissue cases in *Miller* v. *Brass Company*, 104 U. S. 350, *Mahn* v. *Harwood*, 112 U. S. 354, and *Wollensak* v. *Reiher*, 115 U. S. 101. There is, however, this difference that whereas the rule in reissue cases demands diligence at all times with especially good explanation if the delay exceeds two years, the diligence of one who, having already filed, copies its claims within two years of the granting of a patent, cannot be inquired into without imposing a condition more strict than

> is imposed by Section 4886 upon one who does not file his application until after the rival patent has been granted" (Rec., p. 74).

Wintroath thereupon appealed to the Court of Appeals of the District of Columbia (Rec., p. 75), which court held that because Chapman and Chapman did not make the precise claims of the interference issue until about one year and eight months after the issuance of the Wintroath patent, they were estopped from making them at all. and that, therefore, Wintroath was entitled to judgment of *priority of invention,* notwithstanding the fact that he did not conceive such invention until more than a year and a half *after* Chapman and Chapman had filed in the Patent Office an application fully illustrating and describing it. Also the court definitely announced its adherence to the doctrine of the Rowntree-Sloan case, with the modification, however, that the period should be one year unless the applicant should satisfy the Commissioner that the delay was unavoidable, but gave Chapman and Chapman no opportunity to present such a showing (Rec., pp. 133-135).

Although Chapman and Chapman's original application was pending in the Patent Office at the time of Wintroath's conception of the invention, and was at all times prosecuted according to law, and their divisional application was filed while their original application was still pending, the Court of Appeals further held that they were guilty of laches in not having made the specific claims of the interference issue within one year after Wintroath's patent was issued; that such laches affected the question of *priority,* and that therefore the court had jurisdiction in the premises,—overlooking, or ignoring, the fact that in such a state of facts what the court is pleased to term "laches" could be no more nor less than the statutory bar of abandonment of the inven-

tion, and that such abandonment, if established, was to the *public* and not to *Wintroath*, and had no bearing on his claim to priority. (Rec., pp. 130-135.)

Judgment was entered accordingly on March 4, 1913. (Rec., p. 136.)

On March 16, 1918, Chapman and Chapman filed their petition for rehearing (Rec., pp. 136-9), which petition was, on the 23rd day of March, 1918, denied. (Rec., p. 139.)

Chapman and Chapman then filed in this court their petition for a writ of *certiorari* to review the judgment of the Court of Appeals with respect to the propositions of law on which it was founded, which petition was granted. (Rec., p. 140.)

Errors Relied Upon.

It is contended on behalf of petitioners that

(*a*) The Court of Appeals erred in holding that an applicant for a patent is estopped from making the claims of a patent for interference purposes after the expiration of one year from the date of issue of the patent.

(*b*) In view of the undisputed fact that Chapman and Chapman were the first inventors of the subject-matter of the issue, the judgment of the Court of Appeals awarding *priority of invention* to Wintroath was erroneous and should be reversed.

(*c*) The question of *priority* as between the parties having been foreclosed by Wintroath's admission that he conceived the invention after Chapman and Chapman's application was filed, the Court of Appeals was without jurisdiction on an interference appeal to consider and determine petitioner's right to a patent for the subject-matter of the interference.

Brief of Argument.

1. An application for patent is a purely statutory proceeding, and an applicant is entitled to all the rights conferred by the patent statutes.

> "A party seeking a right under the patent statutes may avail himself of all their provisions, and the courts may not deny him the benefit of a single one. These are questions not of natural, but of purely statutory right. . . . . No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public."
>
> *United States* v. *American Bell Telephone Company, et al.*, 167 U. S. 224 (p. 246).

Under Sec. 4886 Rev. Stat.* an inventor may obtain a patent for his invention provided, among other things, that it was not patented more than *two* years prior to his *application*.

Wintroath's patent was issued Nov. 25, 1913; Chapman and Chapman's divisional application containing the claims of the interference issue was filed July 6, 1915, less than two years thereafter. (Rec., p. 53.)

Therefore, even if their original application be left out of consideration, the Wintroath patent was not a statutory bar to the grant of a patent to Chapman and Chapman.

2. Section 4904† Rev. Stat., which is the statutory authority for the declaration of interferences, fixes no time limit within which the applicant of a pending application must claim an invention already patented to another in order to obtain an interference with such patent, other than that the patent must be *unexpired*.

Wintroath's patent was unexpired, and therefore

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* See p. 17.

† See p. 19.

Chapman and Chapman were lawfully entitled to contest priority with him.

3. It is not disputed that Chapman and Chapman's original application fully discloses the subject-matter of their divisional application and of the interference issue, and was never abandoned or forfeited, but was regularly prosecuted according to law and the rules of the Patent Office.

Such original application was filed March 10, 1909; Wintroath's claimed date of conception of the invention in controversy is October 1, 1910. (Rec., p. 55.)

Therefore, considering Chapman and Chapman's original application merely as proof of their priority over Wintroath, they are indubitably the first inventors of the issue of the interference.

Victor Talking Mach. Co., et al., v. *Am. Graphophone Co.*, 145 Fed. 350 (p. 351).

Auto. Weighing Mchn. Co. v. *Pneumatic Scale Co.*, 166 Fed. 288.

Sundh Elec. Co. v. *Interborough Rapid Transit Co.*, 198 Fed. 94.

Lemley v. *Dobson-Evans Co.*, 243 Fed. 391.

4. Interferences are authorized for the sole purpose of determining the question of *priority of invention.*

"The statute is explicit. It limits the declaration of interferences to the question of priority of invention."

Lowry v. *Allen*, 203 U. S. 476.

Ewing v. *U. S. ex rel Fowler*, 244 U. S. 1, p. 11.

It follows that inasmuch as Chapman and Chapman's applications (divisional as well as original) were filed less than two years after the grant of Wintroath's patent, and their priority over Wintroath is incontrovertibly established, judgment should have been rendered in their favor.

Ewing v. *U. S. ex rel Fowler, supra.*

5. The rule announced by the Court of Appeals of the District of Columbia in the case of *Rowntree* v. *Sloan*, 45 App. D. C. 207, and applied in the case at bar, that failure of an applicant to make the claims of a patent within one year after the issuance of the patent estops him to make them at all, is judicial legislation, and is directly in conflict with sections 4886 and 4904 Rev. Stat.

For more than forty years it has been the practice of the Patent Office to declare interferences between applicants and patentees where the applicant made affidavit showing his conception of the invention prior to the filing of the patentee's application. As far back as 1870, Rule 51* provided that interferences would be declared "when an applicant having been rejected upon a prior unexpired patent or the prior application of another, claims to have made the invention before the prior applicant or patentee." (See Lowery's Annotated Interference Rules, p. 7.)

Moreover, until the amendment of March 3, 1897, to Sec. 4886 Rev. Stat., which introduced the words "or more than two years prior to his application," a prior unexpired patent was never a bar to the grant of a patent to an applicant who could prove his claim to priority over it, regardless of when his application was filed.

Schreeve v. *Grissinger*, 202 O. G. 951; C. D., 1914, 49 (p. 51).

Sec. 4904 Rev. Stat. provides for the declaration of interferences between an application and *any unexpired* patent, so that reading the latter section in connection with Sec. 4886, when the Commissioner is of the opinion that an interference exists between an application and any unexpired patent issued not more than *two* years before the *application was filed*, the applicant has a

* See foot note, p. 17.

statutory right to the declaration of such interference, and on proving priority, to receive his patent.

Ewing v. *U. S. ex rel Fowler, supra.*

6. An applicant who prosecutes his application according to law and the Patent Office Rules is not chargeable with laches.

> "Neither can a party pursuing a strictly legal remedy be adjudged in the wrong if he acts within the time allowed and pursues the method prescribed by the statute."
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> *U. S.* v. *American Bell Telephone Co. et al.*, 167 U. S. 224 (p. 246.)
>
> *Crown Cork & Seal Co.* v. *Aluminum Stopper Co.*, 108 Fed. 845 (p. 851).
>
> *Columbia Motor Car Co.* v. *C. A. Duerr & Co.*, 184 Fed. 893 (p. 895).

Chapman and Chapman's original and divisional applications were both at all times prosecuted strictly according to law and the rules of the Patent Office, and were never abandoned or forfeited. Consequently the finding of the Court of Appeals that they were guilty of laches was erroneous.

7. The time when a claim is first made is immaterial, as when made it relates back to the date of filing of the application, and if made in a divisional application, it relates back to the date of filing of the original or parent application.

Lotz v. *Kenny*, 31 App. D. C. 205.

Von Reclinghausen v. *Dempster*, 34 App. D. C. 474.

8. Sec. 4894 Rev. Stat.* relates to the prosecution of *applications* to save them from abandonment, and has nothing whatever to do with abandonment of *inventions*. It does not apply to the case at bar because it cannot be disputed that Chapman and Chapman's appli-

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* See p. 18.

cations were amended from time to time, in each case within one year from the last preceding official action, as required by law and the Patent Office Rules. (See Rules 31, 68, 77 and 171.*)

9. The effect of the ruling of the Court of Appeals in this case is that Chapman and Chapman constructively abandoned their invention to Wintroath, a later inventor, and that such constructive abandonment occurred while they had still pending, and were regularly prosecuting, an application for patent therefor.

The patent laws do not recognize such a thing as the *constructive* abandonment of an invention for which an applicant has lawfully filed, and is regularly prosecuting, an application for patent. Abandonment of an invention is a question of fact, and must be proven.

Ide v. *Trorlicht Co.*, 115 Fed. 144.

Saunders v. *Miller*, 33 App. D. C. 456.

Miller v. *Eagle Mfg. Co.*, 156 U. S. 186.

Rolfe v. *Hoffman*, 26 App. D. C. 336 (p. 340).

Kinnear Mfg. Co. v. *Wilson*, 142 Fed. 970 (p. 973).

Abandonment of an invention is a very different thing from abandonment of an application for patent.

Western Elec. Co., v. *Sperry Elec. Co.*, 58 Fed. 186 (p. 191).

Hayes-Young Tie Plate Co. v. *St. Louis Transit Co.*, 137 Fed. 82.

General Electric Co. v. *Continental Fibre Co.*, 256 Fed. 660 (p. 663).

Abandonment of an invention completed and reduced to practice by the filing of an allowable application for patent therefor inures to the benefit of the public, and not to the benefit of a later inventor.

Ex parte Gosselin, 97 O. G. 2977 (2979).

Millet & Reed v. *Com. of Patents*, 18 App. D. C. 186 (96 O. G. 1241).

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* See foot note, pp. 17 and 18.

Patent Office Rules 31, 68, 77 and 171, which provide for amendment of applications within one year from the date of the last official action of the Patent Office, all relate to abandonment of *applications.*

The statutes relating to constructive abandonment of *inventions* in all cases fix a limit of *two* years except when the application is filed in a foreign country more than one year before application is made in this country. (See Rev. Stat. Sections 4886, 4887, 4897 and 4920.)*

The rule as to constructive abandonment in the case of applications for reissue, generally, though not invariably, fixes a limit of *two* years.

Miller v. *Brass Co.,* 104 U. S. 350.
Mahn v. *Harwood,* 112 U. S. 354.
Wollensack v. *Reiher,* 115 U. S. 101.

10. The rule devised by the Court of Appeals in *Rowntree* v. *Sloan,* that failure of an applicant to make the claim of an unexpired patent within one year from the date of such patent estops the applicant to make such claim at all, is arbitrary because it has no foundation in law, and is illogical because, if there be any ground for invoking the doctrine of estoppel in such a case, there is no reason why it should apply in one year rather than at any other time.

11. There can be no question of estoppel as between Chapman & Chapman and Wintroath because the basic conditions to create an estoppel do not exist.

There was no privity of relationship between the parties.

Chapman and Chapman were unaware of Wintroath's application for patent.

Wintroath was not misled to his injury by any act or failure to act of Chapman and Chapman.

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* See pp. 17 to 20.

It was not Chapman and Chapman's duty, but the Commissioner's to ascertain if there was an interference, and to declare it. *Ewing* v. *ex rel. Fowler,* supra. Sec. 4904 Rev. Stat.

See Bigelow on Estoppel—Fifth Ed. Pages 26-28; 585; 594-597.

12. The apparent disapproval of the Court of Appeals of the existing statutory provisions governing the filing and prosecution of applications for patent, does not justify legislation by that court to correct what it conceives to be unwise, or against public policy. Congress is the only body endowed under the constitution with legislative power.

Boston Store v. *American Graphophone Co. et al.,* 246 U. S. 8 (pp. 25-6).

13. Laches or estoppel in this case is not ancillary to the question of priority, as Chapman and Chapman had completed the invention in controversy, had filed their application for patent therefor, and were regularly prosecuting such application, more than two years before Wintroath's conception of such invention.

14. The question of actual priority of invention having been foreclosed by Wintroath's admission, the Court of Appeals was without jurisdiction on an interference appeal to hear and determine Chapman and Chapman's right to a patent.

Norling v. *Hayes,* 37 App. D. C. 169.

Lowry v. *Allen,* 203 U. S. 476.

Statutes Involved.*

Sec. 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than *two years prior to his application*, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor.

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*Patent Office Rules Involved.

Rule 51 of 1870: Interferences will be declared in the following cases, when all the parties claim substantially the same patentable invention:

. . . . . .

Second. When an applicant having been rejected upon the prior unexpired patent or the prior application of another, claims to have made the invention before the prior applicant or patentee.

Third. When an invention is claimed in a renewed application which is shown or claimed in an application filed or unexpired patent granted prior to the filing of such renewed application. . . .

(See Lowery on Interference Proceedings, pp. 4-7.)

Rule 31. . . . The application must be completed and prepared for examination within one year after the filing of the petition; and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action thereon (Rule 77), of which notice shall have been duly mailed to him or his agent, the application will be regarded as abandoned, unless it shall be shown to the satisfaction of the Commissioner that such delay was unavoidable. (See Rules 171 and 172.)

Rule 68. The applicant has a right to amend before or after the first rejection or action; and he may amend as often as the Examiner presents new references or reasons for rejection. . . .

Rule 77. If an applicant neglect to prosecute his application for one year after the date when the last official notice of any action by the office was mailed to him, the application will be held to be abandoned, as set forth in Rule 171. . . .

Rule 93. An interference is a proceeding instituted for the purpose of determining the question of priority of invention between two or more parties claiming substantially the same patentable invention. The fact that one of the parties has already obtained a patent will not prevent

Sec. 4887. . . . But no patent shall be granted on an application for patent for an invention or discovery or a design which had been patented or described in a printed publication in this or any foreign country more than *two years* before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country for more than two years prior to such filing.

Sec. 4894. All applications for patents shall be com-

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an interference, for, although the Commissioner has no power to cancel a patent, he may grant another patent for the same invention to a person who proves to be the prior inventor.

Rule 94. Interferences will be declared in the following cases, when all the parties claim substantially the same patentable invention; . . .

(2) Between an original application and an unexpired patent containing conflicting claims, when the applicant, having been rejected on the patent, shall file an affidavit that he made the invention before the patentee's application was filed. . . .

Rule 111. . . . A party who alleges no date in his preliminary statement earlier than the filing date of the application or applications of the other party or parties shall not have access to the preliminary statement of said party or parties.

Rule 114. If the junior party to an interference, or if any party thereto other than the senior party, fails to file a statement, or if his statement fails to overcome the *prima facie* case made by the respective dates of application, such party will be notified by the Examiner of Interferences that judgment upon the record will be rendered against him at the expiration of thirty days, unless cause is shown why such action should not be taken.

Rule 116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts.

Rule 117. The preliminary statement can in no case be used as evidence in behalf of the party making it.

Rule 171. An abandoned application is one in which all the essential parts have not been filed so that it is completed and prepared for examination within a period of one year, or which the applicant has failed to prosecute within one year after any action therein of which notice has been duly given (see Rules 31 and 77), or which the applicant has expressly abandoned by filing in the office a written declaration of abandonment, signed by himself and assignee, if any, identifying his application by title of invention, serial number, and date of filing. (See Rule 60.)

Prosecution of an application to save it from abandonment must include such proper action as the condition of the case may require. The admission of an amendment not responsive to the last official action, or refusal to admit the same, and any proceedings relative thereto, shall not operate to save the application from abandonment under section 4894 of the Revised Statutes.

pleted and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

Sec. 4897. Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it was passed and allowed, and notice thereof was sent to the applicant or his agent, shall have a right to make an application for a patent for such invention or discovery the same as in the case of an original application. But such second application must be made within two years after the allowance of the original application. . . . And upon the hearing of renewed applications preferred under this section, abandonment shall be considered as a question of fact.

Sec. 4903. Whenever, on examination, any claim for a patent is rejected, the Commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejection, together with such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for patent, with or without altering his specifications, the Commissioner shall order a re-examination of the case.

Sec. 4904. Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any *unex-*

pired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the Commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the board of examiners-in-chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe.

Sec. 4920. In any action for infringement the defendant may plead the general issue, and, having given notice in writing to the plaintiff or his attorney thirty days before, may prove on trial any one or more of the following special matters:

. . . . . .

Third. That it had been patented or described in some printed publication prior to his supposed invention or discovery thereof, or more than two years prior to his application for a patent therefor; or . . .

Fifth. That it had been in public use or on sale in this country for more than two years before hi application for a patent, or had been abandoned to the public.

ACT OF FEB. 9, 1893, CH. 74; 27 STAT. L., 434.

Sec. 9. That the determination of appeals from the decision of the Commissioner of Patents, now vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of section seven hundred and eighty of the Revised Statutes of the United States, relating to the District of Columbia, shall hereafter be, and the same is hereby, vested in the court of appeals created by this act; and in addition any party aggrieved by a decision of the Commissioner of Patents in any interference case may appeal therefrom to said court of appeals.

ARGUMENT.

First Question.

Under Section 4886, Rev. Stat., an issued patent is not a bar to the grant of a patent for the same invention to a *later* applicant unless the later application was filed more than *two* years after the grant of the patent, and under no circumstances does the Statute make the issuance of a patent to one inventor a bar to the grant of a patent for the same invention to an *earlier* applicant who is duly prosecuting his application. On the contrary, Section 4904, Rev. Stat., specifically makes provision for the determination of the question of priority as between the patentee of *any unexpired* patent and an applicant having a pending application in the Patent Office.

It follows, therefore, that an applicant, whose pending application for patent was filed in the Patent Office less than two years after the grant of a patent to another for the same invention, has an absolute right to have the question of priority determined as between him and the prior patentee, and if the applicant should prove to be the first inventor, he is entitled under the Statutes to the grant of a patent to him for such invention. It would be a manifest absurdity to hold that this rule does not apply where the applicant's application was filed *earlier* than the patentee's application, or before the granting of his patent.

This practice has been consistently followed by the Patent Office for more than forty years, and until the decision of the Court of Appeals of the District of Columbia in the case of *Rowntree* v. *Sloan* (45 App. D. C. 207), its legality was unquestioned. In the case of

Rolfe v. *Hoffman,* that court, in an opinion by Mr. Justice Duell, formerly Commissioner of Patents, said:

> "It is true that two years elapsed between his alleged reduction to practice and the filing of his application for patent, during which interval his rival entered the field and secured a patent. Such a period of delay, standing by itself does not constitute an abandonment of his right to a patent based on priority of invention. An inventor having reduced his invention to practice is entitled to a period of two years in which to put the same in public use and on sale without a forfeiture of his right to receive a patent based upon an application filed before the statutory bar has arisen. Neither abandonment nor forfeiture within that period can be presumed but must be proven.
>
> *Rolfe* v. *Hoffman,* 26 App. D. C. 336 (p. 340); 1906 C. D., 588, pp. 590-1 (121 O. G., 1350).

The Rowntree-Sloan decision, however, announced the novel doctrine that unless an applicant introduced into his application claims corresponding with those of an issued patent within *one* year from the grant of such patent, he was estopped from making such claims at all, thereby making the failure of an applicant to make claims corresponding to those of a patent within *one* year from the grant thereof operate as *an abandonment* by him *to the patentee* of the *invention* defined by such claims.

Not only is this doctrine entirely without foundation in law, but it is absolutely inconsistent with Section 4886, Rev. Stat. For example, under Section 4886, an inventor may put his invention into public use for any period less than two years, and may then file his application for and receive a valid patent for his invention, notwithstanding anything that may have been done by later inventors in the meantime. After the first inventor has put his invention into public use, and before he has

filed his application for patent, a later inventor may apply for and receive his patent, and it is quite possible, and occasionally happens, that such later inventor may receive his patent more than a year before the first inventor makes his application, but, under Section 4886, the issuance of such patent to a later inventor in no way vitiates the right of the first inventor to receive his patent after he has duly established the priority of his invention.

Applicant's Rights Fixed by Statutes.

The rights of inventors to patent protection are purely statutory and cannot be abridged by the courts. This court in the case of *U. S.* v. *Telephone Company* very fully considered this precise question and held that the conditions under which an applicant may apply for and receive a patent are determined by statute, and in the absence of fraud it is beyond the power of the courts to change or modify those conditions. For example, since the statutes prescribe on what terms an application may be prosecuted in the Patent Office in the way of responding to official actions by amendment or argument, and allow a term of one year within which to reply to any official action, it is beyond the power of the courts to change that term and to hold that a case has become abandoned where the applicant has complied with the law in the prosecution of his application. We quote as follows from the opinion filed in that case:

> "Neither can a party pursuing a strictly legal remedy be adjudged in the wrong if he acts within the time allowed and pursues the method prescribed by the statute. If the statute gives him five years within which to bring an action on a note, he cannot be denied the relief simply because he waits four

years and eleven months. If he has two years after a judgment against him within which to take an appeal, he may wait until the last day of the two years. Under Section 4886, Revised Statutes, an inventor has two years from the time his invention is disclosed to the public within which to make his application, and unless an abandonment is shown during that time he is entitled to a patent, and the patent runs, as any other patent, for seventeen years from its date. He cannot be deprived of this right by proof that if he had filed his application immediately after the invention the patent would have been issued two years earlier than it was, and the public therefore would have come into possession of the free use of the invention two years sooner. **The statute has given this right, and no consideration of the public benefit can take it from him.** His right exists because Congress has declared that it should. It will not do to say that, because Congress has declared that seventeen years is the life of a patent, seventeen years is the limit of the possible monopoly; for the same legislation that gives seventeen years as the life of a patent gives two years within which an application for a patent may be made, and during that time, as well as while the application is pending in the Department, the applicant has practically, if not legally, an exclusive use. A party seeking a right under the patent statutes may avail himself of all their provisions, and *the courts may not deny him the benefit of a single one.* These are questions not of natural but of purely statutory right. Congress, instead of fixing seventeen, had the power to fix thirty years as the life of a patent. **No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public."**

U. S. v. *American Bell Telephone Co. et al.*, 167 U. S., 224 (p. 246), C. D., 1897, 442, pp. 449-50 (79 O. G., 1362).

To the same effect is the decision of the Circuit Court of Appeals for the 4th Circuit in the case of *Crown Cork & Seal Co. of Baltimore City* v. *Aluminum Stopper Co.*

of Baltimore City et al. In the latter case the court said:

"Again, it is strenuously urged that the delays in the Patent Office pending the application worked a forfeiture. The record shows that the inventor encountered serious difficulties in the securing of his patent, successive objections being interposed by the Examiner, necessitating appeals. In each case, however, the necessary steps were taken within the two years limited by the statute, and during the long period which intervened between the filing of the application and the issuance of the patent, although there are abundant signs of discouragement there are none of abandonment, for toward the end of each period of limitation he resumes the struggle, and although often stricken down he did by successive appeals and in strict conformity with the requirements of the statute, at last succeed in establishing his right to the patent. The argument of the learned counsel assumes that the inventor is under some sort of obligation to give the public the benefit of his invention as speedily as possible and that he is in fault for any avoidable delay. The inventor does not determine the measure of his rights or of his obligations. The law determines that for him, and if the Government thinks that more speed is desirable in the interest of the public *it should change the law. The courts cannot do so.* Nor can they exact of inventors any degree of diligence other than compliance with the statutory provisions, official regulations, departmental requirements, and formal demands which are prescribed by and for the officials and others charged with duties under the patent laws. Certain fixed periods are provided in Sections 4894 and 4904, Revised Statutes, for securing progress in applications for patents. If the inventor is allowed two years after a judgment against him within which to take appeal, he may wait until the last day of the two years. If Congress thinks this too long a time, it should fix another limitation; **but courts cannot deny the benefits which the statute gives.** There are no special reasons for invoking that power in this case if we had it, for it does not appear that during all these years of delay any other inventor was attempting to enter the field. This

whole subject had full consideration in *U. S.* v. *American Bell Tel. Co.* (C. D., 1897, 442; 79 O. G., 1362; 167 U. S., 224; 17 Sup. Ct., 807; 42 L. Ed., 144), where there was a delay of fourteen years in the Patent Office."

Crown Cork & Seal Co. v. *Aluminum Stopper Co.*, 108 Fed., 845 (p. 851), C. D., 1901, 450, pp. 457-8 (96 O. G., 2573).

The Circuit Court of Appeals for the Second Circuit expressed the same views in the suit on the Selden patent. We quote as follows:

"It is urged that we should regard unfavorably the patent on account of this delay in the Patent Office, should seek to avoid giving it a broad construction, and should permit the alleged abuse of the law to weigh against the standing of the complainants in a court of equity. But the patentee acted wholly within his rights. He merely took advantage of the delays which the law permitted him. He followed strictly the statutes and rules of procedure, and the courts cannot exact a greater measure of diligence from him. When the patent was granted under the authority of the law, it became entitled to the consideration accorded to any other patent. If the statutes and rules permit unnecessary delays, they should be changed; but we reject the view that this court owes any duty to relieve against their operation. This patent, even if it be useful only for tribute, must be viewed without prejudice and with absolute judicial impartiality."

Columbia Motor Car Co. et al. v. *C. A. Duerr & Co. et al.*, 184 Fed. 893 (p. 895).

Time When Claims Made Immaterial.

It has also been established law for many years that an applicant for patent, at any time during the prosecution of his application, is entitled to make claims commensurate with his invention, and that such claims, when

made, date back to the date of filing of his application. If made in a divisional application filed while the original application is pending, as in the case at bar, they relate back to the date of filing of the original, or parent, application, and *prima facie,* the date of filing of such original application is considered the date of making of the invention.

"It is settled law that claims may be introduced into an application by amendment, and, if their subject-matter is sufficiently disclosed by the application as filed, *even though not theretofore claimed,* they may relate back to and receive all the benefits and advantages incident to the earlier filing date. It is equally well settled that if, under the rules of the Patent Office, division is required between the later claims and those previously contained in the application, the original and the divisional applications will be treated as continuous, and the date of filing of the original will be accorded the applicant as the date of constructive reduction to practice for both. (*Duryea* v. *Rice,* C. D., 1907, 443; 126 O. G., 1357; 28 App. D. C., 423; *Lotz* v. *Kenny,* C. D., 1908, 467; 135 O. G., 1801; 31 App. D. C., 205.)

"**True, the claims to the invention here in issue were never specifically presented in the earlier case; but the effect cannot be other than the same.** To hold that it was necessary for appellee to insert the claims in issue in the original application in order to obtain the benefit of its filing date before presenting them in the division, would be to require that which would involve considerable delay in the prosecution of the case and which could accomplish no beneficial purpose. No such rule seems to have been contemplated by the Commissioner in *Hopfelt* v. *Read* (C. D., 1903, 319; 106 O. G., 767), quoted with approval in *Duryea* v. *Rice, supra,* when, speaking of the question of constructive reduction to practice, he said:

" 'This is so when two applications are pending contemporaneously and the first is not abandoned, whether the claims are presented in the original application itself or in a later application filed as

a division or a continuation of the original application, as in the second case the later application dates back to the earlier one. It is only necessary that the description in both applications shall be sufficient to support the claims. The fact that the Office practice may prohibit the prosecution and allowance of the claims in an earlier application does not prevent an applicant from availing himself of the earlier date of filing as his date of constructive reduction to practice when he files a later application containing the same description and the claims based upon the same.'

"But counsel for appellant contend that the earlier application stood wholly rejected. It is true that the claims of the earlier application had been awarded to another party as the result of the former interference, but appellee was entitled to one year from February 25, 1905, in which to take such action as he desired. Within that time, he filed the application here in issue. Was there an application pending in the Office to which the divisional application might attach? This is the question upon which the authorities seem to turn. Here we think there was. Until the period of one year had elapsed, this application was susceptible of amendment, and, if claims had been presented which met with the approval of the patent Office, a valid patent could have been issued thereon. In fact, appellee presented an amendment which was acted upon by the Primary Examiner February 2, 1906.

. . . . . .

"The case of *Lotz* v. *Kenny, supra,* we think is decisive of this case. There the appellee had filed an application showing and describing the invention in issue, but not specifically claiming the same, and *no claims were inserted thereto until after a patent had been issued to the appellant.* On July 15, 1905, the Patent Office held these claims to be for a distinct and separate invention and required the appellee to restrict his application to the invention originally claimed. In the meantime, however, on June 1, 1905, the latter filed the application there in issue. We are unable to see any material difference between that case and the one at bar. There,

as here, the claims in issue were not presented until after a patent had issued to the adverse party. Although these claims were first inserted in the original application, appellee did not await a ruling of the Patent Office as to the necessity of division, but incorporated them in a second application, no less distinct from the parent application than the one at bar; and yet the court held them to constitute a continuous transaction, saying:

> "'It is quite clear that the invention of the issue was disclosed in the prior applications, though *no specific claims therefor were made until after the issue of the patent to Lotz.* The claims could have been inserted therein by amendment, but for the rule of the Patent Office which does not permit a patent to issue for two separate inventions. Under such conditions, nothing remained but to file a new and divisional application, or to abandon this part of the invention.'"
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> *Von Recklinghausen* v. *Dempster,* 34 App. D. C., 474 (154 O. G., 252).

Following the matter quoted from *Lotz* v. *Kenny* in the above decision, the Court of Appeals, D. C., in the case of *Lotz* v. *Kenny,* goes on to say:

> "The first contention on behalf of the appellant is that, as section 4888 Revised Statutes requires that the application shall not only contain a full description of the invention but also contain claims for the same, it is not permissible to amend by setting up a new claim to the invention or a part thereof not before claimed. The unsoundness of this proposition in a case where the subject-matter is contained in the application though not followed by a specific claim therefor, has been pointed out in the recent case of *Phillips* v. *Sensenich, ante,* 14; 134 O. G., 1806.
>
> "Where the conditions of the original application require division instead of its amendment merely, to secure a patent embracing the additional claims, the rule is necessarily the same, as held in the case last cited; and the new application dates back to

the original one, securing to the applicant the benefit of a constructive reduction to practice as of that date. (*Duryea* v. *Rice,* C. D., 1907, 443; 126 O. G., 1357; 28 App. D. C., 423, 435.)

"It is further contended that by Kenny's failure to make the specific claim of the invention of the issue under his original application, or by division, until after Lotz entered the Office with an application therefor, he must be regarded, as to Lotz at least, as having lost his right now to make the claim. The following decisions are relied on to support this contention: (*Miller* v. *Brass Co.,* C. D., 1882, 49; 21 O. G., 201; 104 U. S., 352; *Railroad Co.* v. *Sayles,* C. D., 1879, 349; 15 O. G., 243; 97 U. S., 554; *Bechman* v. *Wood,* C. D., 1899, 453; 89 O. G., 2459; 15 App. D. C., 484.) *Miller* v. *Brass Co.* was a case of a reissued patent, and it was there held that when a specific device or combination only is claimed, and a patent issued therefor, any other device or combination disclosed but not claimed is regarded as abandoned to the public, unless at least, with due diligence the patentee applies for reissue, and shows clearly that his omission to make the claim was the result of inadvertence, accident, or mistake. The present is not a case of that kind, nor does it come within the rule governing the other two cases. In both there were, after long delay, material alterations of the specifications so as to cover the invention then claimed. In *Bechman* v. *Wood* (C. D., 1899, 453; 89 O. G., 2459; 15 App. D. C., 484, 491), the original specifications did not disclose the broad claim of the issue, and it was not made for nearly three years after filing, and after Bechman had entered the Office making a claim for another specific form of the generic invention; and it was said, on the authority of *Railway Co.* v. *Sayles* (C. D., 1879, 349; 15 O. G., 243; 97 U. S., 554):

> " 'But it was not competent for Wood so to alter the specifications as to interfere with other inventions made prior to the alteration.'

"Where, as in this case, the invention was shown in the original application, and the making of the claim involved no material alteration of the specifi-

cations, the Rule in Bechman v. Wood does not apply. (*McBerty* v. *Cook,* C. D., 1900, 248; 90 O. G., 2295; 16 App. D. C., 133, 138; *Luger* v. *Browning,* C. D., 1903, 593; 104 O. G., 1123; 21 App. D. C., 201, 205.) In that case it was said:

> "'It is sought, also, to bring this case within the ruling of *Bechman* v. *Wood* (C. D., 1899, 453; 89 O. G., 2459; 15 App. D. C., 484) and *Chicago & N. W. Ry. Co.* v. *Sayles* (C. D., 1879, 349; 15 O. G., 243; 97 U. S., 554), which latter was the decision that determined the ruling in *Bechman* v. *Wood.* The contention of the appellant in this regard, if sustained, would apply to all cases in the Patent Office wherein the claim of one application is suggested to another applicant for the purpose of an interference thereupon to be declared. But the case of *Bechman* v. *Wood,* as explained in the case of *McBerty* v. *Cook,* was not intended to have any such application. The distinction is well pointed out by the Board of Examiners-in-Chief in their opinion filed in this case. It is that, when new matter is introduced into an application, it cannot be allowed to dominate previous claims of another applicant; but that **when matter has been previously disclosed, although not formally claimed, it is proper to be included in a subsequent formal claim, and may take precedence of previous claims advanced by another applicant.** (See also, *Furman* v. *Dean,* C. D., 1905, 582; 114 O. G., 1552; 24 App. D. C., 277, 281.)'"
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> *Lotz* v. *Kenny,* 31 App. D. C., 205 (135 O. G., 1801).

The case of *Lowry* v. *Spoon* is also directly in point. We quote as follows from that case:

> "The records show, however, that before Lowry's filing date Spoon had filed an application October 24, 1896, for a patent upon the press with which the bale now in controversy was made, and the operation of that press in making the bale was described. The bale was disclosed, but the claims were there confined to the apparatus, *and none was made to the*

bale. The application involved in the interference was filed as a division of the earlier application, and by reason of that earlier application Spoon was made the senior party to the interference.

"Lowry's contention is that since his application was filed and his patent was granted when there was no other application in the Patent Office claiming the invention the presumption is in favor of the validity of his patent.

. . . . . .

"A divisional application entitles the applicant to the benefit of the date of the original application from which is was divided. The two applications constitute parts of one continuous proceeding. (*Dederick* v. *Fox,* 63 O. G., 1916; *Cain* v. *Park,* 86 O. G., 797.) **The question whether the claims are in the original or the divisional case is not of consequence,** and therefore if Spoon is to be deprived of the benefit of his early filing date it is because of the time when he presented the claims and not because of the fact that they are in a divisional application. His rights are the same as if the claims were inserted in the original case by an amendment, since a divisional application is, in effect, an amendment. A party has the right to amend while his application is pending, and to attempt to give the several claims effect as of the date when they were made rather than the date when the application was filed would lead to endless confusion. After a party asserts inventorship of a particular thing by making a claim to it, whether originally or by amendment, the only thing remaining to be determined is the time when he was first in possession of it. **If he is entitled to claim it at all, the Office records show that he was in possesoin of it when he filed his application. It would seem that no one who made the invention subsequent to that date can be regarded as the first inventor. In the absence of proof of prior invention by another the judgment must be in his favor."**

Lowry v. *Spoon,* 110 O. G., 858.

The authorities cited clearly hold that it is immaterial whether or not Chapman and Chapman claimed the

subject-matter of the issue in the parent application. That it was fully shown and described therein is not disputed, and that is all that is material here. Those familiar with Patent Office practice are well aware of the difficulties which inventors encounter in formulating claims which will pass the strict scrutiny to which they are subjected by the Examiners, and it is the rule rather than the exception that several actions are necessary before an applicant succeeds in placing his claims in proper condition for allowance over the references cited. An inventor not infrequently fails to recognize just what invention he has made over the prior art, and as applications are usually filed without previous examination of the patented art, an applicant often fails to draw his claims for novel combinations, particularly where the elements entering into such combinations are themselves believed to be novel. In the present case, the issue is drawn to cover the combination of certain bearings in a deep well pumping mechanism—that is to say, a fluid-operated bearing for supporting the power shaft and impeller on a fluid surface, and auxiliary bearing means for sustaining any resultant downward thrust of said power shaft. At the time of filing their application Chapman and Chapman believed that the fluid-operated bearing *per se* was novel and claimed it separately. They also believed that their auxiliary bearing was novel and claimed that separately. They apparently did not at that time realize that the invention resided in the combination of these two bearings with the same power shaft, and therefore did not claim such combination. That fact, however, in no wise prejudiced their right to claim the combination at any time during the pendency of their application, since it is unquestionable that the disclosure of their original application fully covers it.

The case of *Dunkley* v. *Beekhuis*, 39 App. D. C., 494, was one in which a patent issued to Beekhuis pending the application of Dunkley, and his claims were copied by the latter for the purpose of procuring the declaration of an interference. All the tribunals of the Office found that Dunkley was the first to conceive and reduce to practice, provided he was entitled to make the claims of the issue, and that was the single issue of the case. It appears that the controversy was over the action of certain jets of water, termed in the claims "peeling water jets," or "peeling jets of water," and the Commissioner awarded priority to Beekhuis principally on the ground that Dunkley had contemplated only using the jets of water for washing purposes and had not contemplated effecting the peeling by their action. The Court of Appeals, D. C., however, held that it was apparent that the jets of Dunkley would have the effect to remove the skins as well as to cool and wash the fruit, and that even though Dunkley did not realize the peeling effect of his jets, in view of the fact that such jets did operate to produce that result, he was entitled to claim the invention. They say:

> "Dunkley was the first to invent and put into practice a rapid and effective machine for peeling peaches. This comprised in the combination the jets of water which he evidently realized aided in the removal of the skins when disintegrated by the alkali solution. That he did not realize the full extent of their agency cannot deprive him of the benefits accruing from their use.
>
> "His specifications and construction afforded sufficient foundation for the claims; and as he was the first to conceive the idea and reduce it to successful practice, he is entitled to the award of priority."
>
> *Dunkley* v. *Beekhuis*, 39 App. D. C., 494; C. D., 1913, 362, pp. 365-6; 190 O. G., 267.

The same rule is recognized and applied by the Federal Courts. On this point the decision of the U. S. Circuit Court of Appeals for the 6th Circuit, in the case of *Cleveland Foundry Co. et al.* v. *Detroit Vapor Stove Co.*, clearly states the law. In an opinion by Judge Severens the court says:

> "It is true that the patentee did not fully perceive nor correctly perceive, as we think, the principles on which the operation of his burner proceeded. For instance, we more than doubt whether he appreciated that the principle of gravity co-operated in the method of his invention. But he did see and know that the burner he had devised would successfully accomplish the results he anticipated and was laboring for. It is clear enough that while the application was pending he came to understand the operation of his device better than he had, and that his first claim was founded on that better understanding. These are the essential facts on which the issue as to whether such new matter was brought in and claimed as would defeat the validity of the claim must be tested. We think this issue must be determined in favor of the patent. In the case of *Michigan Central R. R. Co.* v. *Consolidated Heating Co.*, 67 Fed. 121, 14 C. C. A., 232, we had occasion to consider the question of the validity of amendments made while the application for a patent was pending. We there held that the validity of such an amendment depended upon the question whether it brought in original matter, or was of something that might be fairly deduced from the original application. In the first instance the amendment would not be justified; in the latter it would. The case was decided upon that distinction. And this is the rule which is elsewhere recognized. *Hobbs* v. *Beach*, 180 U. S. 396, 21 Sup. Ct. 409, 45 L. Ed. 586; *Western Electric Co.* v. *Sperry Electric Co.*, 58 Fed. 186, 7 C. C. A. 164; *Sugar Co.* v. *Yaryan Mfg. Co.* (C. C.), 43 Fed. 140. This distinction harmonizes with the doctrine that the benefit secured by an invention extends to all the uses of which it is capable, whether the inventor had them all in contemplation or not, and the other rule, to which we

have already referred, that it does not matter that he does not understand the principles on which his device operates. If he discovers new uses to which his invention may be put, or discerns the principles thereof more clearly, while his application is pending, in neither case is there any new invention nor any enlargement of the old. And, that being so, there can be no legal objection to his so molding his claims as to secure all his invention discloses."

Cleveland Foundry Co. v. *Detroit Vapor Stove Co.*, 131 Fed. Rep., 853, pp. 857-8.

As the Commissioner well said, "an inventor after another has patented the invention may wait up to two years before filing his own application therefor (Revised Statutes, Section 4886). Since the making of a claim is a mere incident to the patenting of an invention, a patent could not be denied on any theory of laches in such a case." (Record, p. 74.)

The rule is well stated by the Circuit Court of Appeals for the Second Circuit as follows:

"The specifications in that application for 564,586, were full enough to warrant the making of the claims here in controversy (5 and 35). At any time the application might have been amended by adding such claims, and in our opinion it is immaterial that, instead of thus amending it, he took the broader claims on another application, filed while the first was pending. The second may fairly be considered a continuation of the first, and thus Berliner's application antedates the public use, and the facts will not sustain the contention that he abandoned his invention here in suit."

Victor Talking Mach. Co. et al. v. *American Graphophone Co.*, 145 Fed. 350 (p. 351).

See also:

Auto. Weighing Mchne. Co. v. *Pneu. Scale Corpn.*, 166 Fed. 288 (C. C. A., 1st Cir.).

Lemley v. *Dobson-Evans Co.*, 243 Fed. 391 (C. C. A., 6th Cir.).

Sundh Elec. Co. v. *Interborough Co.*, 198 Fed., 94 (C. C. A., 2nd Cir.).

Rule 116 of the Patent Office recognizes and applies this principle as follows:

> "Rule 116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they filed their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts."

It is not disputed that Chapman and Chapman's applications have at all times been prosecuted strictly according to law and the rules of the Patent Office. Nevertheless, in the case at bar the Court of Appeals, despite the fact that its attention was directed both orally and by brief to the foregoing authoritative statements of the law, deliberately ignored them and assumed the right to deny, not only to petitioners, but also to all other applicants in like case, the benefits conferred by the statutes with respect to the right of asserting and establishing priority over a rival claimant.

Abandonment.

It has been long-established law that abandonment of an invention is a matter for strict proof, and not of presumption.

Saunders v. *Miller*, 33 App. D. C., 456; 146 O. G., 505.

International Telephone Mfg. Co. v. *Kellogg Switchboard & Supply Co.*, 171 Fed., 651.

Rolfe v. *Hoffman*, 26 App. D. C., 336, p. 340; 121 O. G., 1350.

McDuffee v. *Hestonville M. & F. Pass. Ry. Co.*, 181 Fed., 503.

In the case of *Saunders* v. *Miller*, 33 App. D. C., 456, Saunders filed an application on February 24, 1905, for patent for an improvement in rubber footwear and a process of making the same, in which he illustrated and described the apparatus involved in the interference, but only claimed the process of making rubber footwear by the use of the apparatus. In the application he made the following statement:

> "the apparatus whereby my process is carried out forms no part of this invention, as any form of machine appropriate to accomplish all the steps above described may be employed."

Division was required, and on June 17, 1905, the applicant filed a divisional application claiming the product produced. On June 19, 1905, Miller filed his application for the invention of the issue. The Saunders original application with claims for the proces was allowed and became forfeited on April 16, 1906, for failure of payment of the final government fee. On April 17, 1906, Miller's patent was issued without interference. On September 8, 1906, Saunders renewed his original application, and on January 10, 1907, he filed a new application in which he copied the drawing and description of his original application and included in it the claims of the Miller patent. The interference was then declared. The Court of Appeals, D. C., in deciding the case, said:

> "There was a complete disclosure and reduction to practice of the invention in 1904. Conceding for the moment that the statement in the process application could be held to constitute abandonment, it would be an abandonment to the public, and not to appellee, since it occurred before appellee came into the field. The record discloses undeniably that appellant, and not appellee, is the real inventor of the device in issue. The disclosure and reduction to practice was followed by experiments as to its utility through the succeeding two years. The finding

of the Patent Office that appellant's apparatus of 1904 was nothing more than an abandoned experiment, is not supported by the record, and with this suggestion as to our view on this point, it will be dismissed without further consideration.

"This invention, therefore, belongs either to appellant or to the public. As before intimated, if abandonment can be established, it must be predicated upon acts of appellant committed before appellee came into the field. In that event, in the state of this record, it would inure to the benefit of the public, and not to appellee. Appellant was making experimental tests of the product of his invention, though in a somewhat public manner, by having the boots worn by the men in the employ of the company with which he was connected, but this is not sufficient to constitute a dedication to public use. Some manifest intention must be shown on the part of appellant to abandon his invention. . . .

"**Abandonment is never presumed. On the other hand, the presumption is against abandonment, and the burden is on the one charging it to establish it by clear and convincing proof.** (*Computing Scale Co.* v. *Automatic Scale Co.*, C. D., 1905, 704; 119 O. G., 1586; 26 App. D. C., 238; affirmed in C. D., 1907, 687; 127 O. G., 849; 204 U. S., 609.) It is likewise the law that where the evidence raises a presumption of abandonment, it may be rebutted by showing acts assertive of the inventor's right and his intention, by experiment or improvement, to perfect his discovery. It is generally held that where an inventor applies for and receives a patent which discloses another unpatented invention not claimed, that it is presumed not to be novel, or is dedicated to the public by the patentee. (*In re Millet*, C. D., 1901, 410; 96 O. G., 1241; 18 App. D. C., 186.) This presumption is rebutted if the patentee has another application, pending in the Patent Office claiming it (*Miller* v. *Eagle Mfg. Co.*, C. D., 1894, 147; 66 O. G., 845; 151 U. S., 186), or if he files such application promptly (*Dederick* v. *Fox*, C. D., 1893, 401; 63 O. G., 1963; 56 Fed., 714). We think appellant comes within the latter class."

Saunders v. *Miller*, 33 App. D. C., 456 (146 O. G., 505).

The law as to abandonment or estoppel in favor of the public is stated by the Circuit Court of Appeals for the Seventh Circuit, as follows:

> "Abandonment or dedication to the public: This contention centers on Dean's intent, *and the burden was on appellant to prove very clearly that Dean meant to donate his invention to the public. Ide* v. *Trorlicht Co.,* 115 Fed. 144, 53 C. C. A. 341, and cases there collated. Within the two years preceding the application there was no public sale or use and no publication under circumstances from which an inference of dedication might be drawn. And the positive evidence leaves no doubt that Dean intended to retain the invention as his own property until he could market it to his profit, as he did in 1901.
>
> "Equitable estoppel: Dean was the first and true inventor of the device in suit. There being no abandonment, no public use or sale, and no publication within the terms of section 4886, Rev. St. (U. S. Comp. St. 1901, p. 3382), his right to the patent is not assailable on statutory grounds. So far as equities are concerned, Dean, in spite of his delay, was the first to put the device into commercial use and the first to apply for a patent. If, during Dean's suspension of activities, McCormick had either patented the device or brought it into public use without a patent, the public would have been indebted to McCormick for benefits conferred, and Dean might well be held estopped by his delay from claiming the public grant; but in our judgment neither reason nor authority sanctions an estoppel against the first and true inventor unless the later comer has cut in between and made the public his debtor by being the first to get to the Patent Office or the market. *Kendall* v. *Winsor,* 21 How. 328, 16 L. Ed., 165; *Consolidated Fruit Jar Co.* v. *Wright,* 94 U. S. 92, 24 L. Ed. 68; *Savary* v. *Lauth,* Fed. Cas. No. 12,389; *White* v. *Allen,* Fed. Cas. No. 17,535. The decision in *Universal Adding Mach. Co.* v. *Comptograph Co.,* 146 Fed. 984, 77 C. C. A. 227, is to the same effect, when the general expressions are read, as they should be, in the light of the particular facts."
>
> *International Telephone Mfg. Co.* v. *Kellogg Switchboard & Supply Co.,* 171 Fed. Rep., 651, p. 656.

In the case at bar Chapman and Chapman were not only the first to get into the Patent Office, but were also the first to get into the market and to disclose the invention to the public, as they could prove if necessary.

In the case of *Rolfe* v. *Hoffman* the Court of Appeals, D. C., in an opinion by Mr. Justice Duell, said:

> "It is true that two years elapsed between his alleged reduction to practice and the filing of his application for patent, during which interval his rival entered the field and secured a patent. Such a period of delay, standing by itself does not constitute an abandonment of his right to a patent based on priority of invention. An inventor having reduced his invention to practice **is entitled to a period of two years in which to put the same in public use and on sale without a forfeiture of his right to receive a patent** based upon an application filed before the statutory bar has arisen. **Neither abandonment nor forfeiture within that period can be presumed but must be proven.**"
>
> *Rolfe* v. *Hoffman*, 26 App. D. C., 336 (p. 340); 1906 C. D., 588 (121 O. G., 1350).

The case of *McDuffee et al.* v. *Hestonville, M. & F. Passenger Ry. Co.*, 181 Fed., 503, decided by the Circuit Court for the Eastern District of Pennsylvania, is interesting and pertinent. In that case the third and fourth clauses of the syllabus are as follows:

> "3. An abandonment of an invention after the filing of an application for a patent, upon which a patent was subsequently granted, *must be established by clear proof showing an intention to abandon*, especially where the invention is a meritorious and valuable one.
>
> "4. *A patent cannot be defeated or limited by intervening rights of third persons applying for and receiving patents between the filing of the application and the issuing of such patent, where there was*

no abandonment of either the application or invention, and no expansion of claims, merely because there was delay in prosecution of the claims, which was satisfactorily explained to the Patent Office."

It appears that the application of Schlesinger, the patentee, was finally rejected *in toto* on October 17, 1887, as being anticipated by the prior art, and then lay dormant from 1887 until December, 1894, when application was made for the revival of the application on the ground that the delay was unavoidable, which application was ultimately granted and a patent issued. In considering the question of abandonment the court says:

"This finding is conclusive upon this court and establishes the fact that the application for the patent in suit had not been abandoned. An abandonment of an application for a patent is one thing and an abandonment of the inventions which the application seeks to have patented is another. And the defendants urge that, notwithstanding the action of the Patent Office justifying the delay in the prosecution of the application, the invention embodied in the combination of claim 1, as finally allowed, was abandoned. A patentable invention may be abandoned actually or constructively. With the subject of constructive abandonment the court has nothing to do in this case. Generally speaking, an actual abandonment of the invention may be by express declaration or by circumstances evincive of an intention to abandon. No express abandonment of the invention embodied in the combination of claim 1 has been shown. If there was an actual abandonment in or after October, 1887, it must rest upon circumstantial evidence clearly establishing the fact. No room should be left for substantial doubt on the point. Especially is this true in view of the meritorious character of the invention and the facts that until October, 1887, all due diligence was observed in prosecuting the application, and no conceivable reason appears why the invention should have been abandoned at or after that time. In *McMillin* v. *Barclay*, Fed. Cas. No. 8,902, Judge McKennan in dealing with this subject said:

"'Nor has the second branch of the defense, that the invention was actually abandoned, any better foothold. This must result from the intention of the patentee, expressly declared, or fairly indicated by his acts. There is certainly no evidence in the case of any express declaration of the patentee to that effect; and, if the lapse of years between the date of his application and of his patent, and his own conduct, can be fully explained upon any other hypothesis, they ought not to be imputed to an intention on his part to abandon his invention. The proof of actual abandonment, after application filed, ought to be indubitably clear. It ought not to rest upon doubtful or disputable inferences.'

"Here the record does not disclose any actual intention to abandon or any act or declaration of abandonment or any consent to the appropriation or use by others of the invention. In the absence of any evidence of a positive intention to abandon, I find it impossible to reconcile the fact, conclusively established by the decision of the Commissioner of Patents, that the application for a patent for the invention was not abandoned, with any theory that the invention must be presumed from the explained and justified delay to have been abandoned. The conclusion reached on this branch of the case is that the invention embodied in claim 1 of the patent in suit was not at any time abandoned."

McDuffee v. *Hestonville, M. & F. Pass. Ry. Co.*, 181 Fed. Rep., 503, pp. 511-12.

This case was subsequently reversed by the Circuit Court of Appeals for the Third Circuit by a decision reported in 185 Fed., 798, but the reversal was on other grounds.

Furthermore, in the case of *Frost* v. *Chase*, the Court of Appeals, D. C., held that, there being no concealment of the invention, the question of laches was not pertinent to the issue of priority of invention. We quote as follows:

"There being no concealment of the invention, *the*

question as to whether Chase has been guilty of laches is not pertinent to the issue here involved, nor is the question of intervening rights one that Frost may raise in this proceeding. (*Norling* v. *Hayes, ante,* 347; 166 O. G., 1282; 37 App. D. C., 169.)"

Frost v. *Chase,* 37 App. D. C., 179 (p. 183).

In the case at bar, also, there has been no concealment of the invention, since Chapman and Chapman not only filed their application for patent, but also, if permitted to do so, could show that they were the first to put the invention into actual practice in this country. The fact that they introduced their invention into public use and filed an application for patent therefor is inconsistent with the theory of suppression. The decision of the same court in *Meyer* v. *Sarfert* clearly states the law. In that case the court said:

"It is argued that Sarfert concealed his invention, and that his case therefore should be governed by the decision in *Mason* v. *Hepburn* (C. D., 1898, 510; 84 O. G., 147; 13 App. D. C.). It is true that he may have concealed it for a little time, but it is very plain *that he soon gave it to the public in the way of the result of its operation,* and that he showed it to his opponent Meyer early in 1899. This is inconsistent with the theory of suppression of the invention to which effect was given in the case of *Mason* v. *Hepburn.*"

Meyer v. *Sarfert,* 21 App. D. C., 26 (p. 29); C. D., 1903, 529 (102 O. G., 1555).

The rule announced in the Rowntree-Sloan case and in the case at bar is inconsistent with all the foregoing established rules of law, and, if valid, its enforcement will revolutionize the long-established practice of the Patent Office.

It has always been the settled policy of the patent laws of this country to reward the first inventor who

has availed himself of the rights and privileges conferred by those laws to disclose his invention to the public and obtain patent protection therefor. The Rowntree-Sloan rule, however, is not in harmony with that policy, but imposes a grievous burden upon inventors in that it requires them, especially after making application for letters patent, to critically examine the claims of each and every patent that may be issued from time to time relating to the arts in which their inventions respectively belong, in order that if any such patent perchance contains a claim that might interfere with the invention sought to be covered by an applicant, he may introduce it into his application for purposes of interference before all right of the applicant to such claim shall have been forever lost. The fact that the Official Gazette now publishes only fragmentary drawings and only one of the claims of most patents makes this burden practically insupportable.

Until the decision in the Rowntree-Sloan case, presumptive abandonment of an *invention* was in no case predicated on inaction short of two years, and the Court of Appeals evidently overlooked the well-settled rule of law that until an application matures into a patent no presumption of abandonment arises as to any subject-matter shown and described therein but not claimed. This is manifest from the reference by the court to the statute relating to the amendment of applications. Section 4894 provides that failure of an applicant to prosecute his application within *one* year after any action therein, of which he shall have received notice, shall work an abandonment of the *application*, but it is well settled that such failure does not work an abandonment of an *invention*, and if a statutory bar has not intervened, the applicant may file a new application and obtain a valid patent.

In the case of *Western Elec. Co.* v. *Sperry Elec. Co.* the Circuit Court of Appeals for the Seventh Circuit, Mr. Chief Justice Fuller and Circuit Judges Woods and Jenkins sitting, stated the law as follows:

> "There is a material difference between the abandonment of an invention and the abandonment of an application for letters patent thereon by failure to comply with section 4894 of the Revised Statutes. The first gives the invention to the public, and, once done, the act is irretrievable; but, besides the power conferred upon the commissioner of patents to relieve an applicant from an abandonment of his application under the statute, an application, which has lapsed, or been rejected or withdrawn, may be renewed or repeated so long, we suppose, as the invention itself has not been abandoned by reason of a two-years public use or otherwise."
>
> *Western Elec. Co.* v. *Sperry Elec. Co.*, 58 Fed., 186, p. 191.

To the same effect is the decision of the Circuit Court of Appeals for the Eighth Circuit in the case of *Hayes-Young Tie Plate Co.* v. *St. Louis Transit Co.:*

> "There is a wide difference between the abandonment of an invention and the abandonment of an application for it. An abandonment of an application is not necessarily an abandonment of the invention, and, after the application has been abandoned, a valid patent for the invention may nevertheless be secured upon a new application, provided the invention has not gone into public use or been upon sale for more than two years prior to the filing of the latter. In cases in which the first application has not been abandoned, subsequent applications and amendments constitute a continuance of the original proceeding, and the two years' public use or sale which may avoid the patent must be reckoned from the presentation of the first application, and not from the filing of subsequent application or amendments. *U. S.* v. *American Bell Telephone Co.*, 167 U. S. 224, 17 Sup. Ct. 809, 42 L. Ed. 144; *Colgate* v. *Western Union Tel. Co.*, Fed. Cas. No. 2,995; *Miehle* v. *Read*,

96 O. G. 426; *Thomson-Houston Electric Co.* v. *Winchester Avenue R. Co.* (C. C.), 71 Fed. 192, 73 O. G. 2155; *Godfrey* v. *Eames*, 1 Wall. 317, 17 L. Ed. 684; *Smith* v. *Goodyear Dental Vulcanite Co.*, 93 U. S. 486, 23 L. Ed. 952; *Cain* v. *Park*, 14 App. D. C. 42, 86 O. G. 797, 798; *Ex parte Stewart*, 4 O. G. 665; *Stirling Co.* v. *St. Louis Brewing Ass'n* (C. C.), 79 Fed. 80; *Dedrick* v. *Fox* (C. C.), 56 Fed. 714, 717; *Ligowski Clay-Pigeon Co.* v. *American Clay-Bird Co.* (C. C.), 34 Fed. 328, 333."

Hayes-Young Tie Plate Co. v. *St. Louis Transit Co.*, 137 Fed., 82.

The decision of the Court of Appeals for the Second Circuit in *Kinnear Mfg. Co.* v. *Wilson* is also in point:

"It is well settled that an inventor by describing an invention in a patent granted to him, does not preclude himself from patenting it subsequently. His omission to claim what he describes may operate as a disclaimer or an abandonment of the matter claimed; but it has no such effect when it appears that the matter thus described but not claimed was the subject of a pending application in the Patent Office by him for another patent. This was so decided by this court in *Thomson-Houston Electric Co.* v. *Elmira Railway Co.* (C. C.), 71 Fed. 396, and for other adjudications it suffices to refer to *Suffolk Co.* v. *Hayden*, 3 Wall. 315, 18 L. Ed. 76, and *Barbed Wire Case*, 143 U. S. 275, 12 Sup. Ct. 443, 36 L. Ed. 154."

Kinnear Mfg. Co. v. *Wilson*, 142 Fed., 973.

Again, applications which have been allowed and have become forfeited for failure to pay the final government fee, may be renewed at any time within two years after the allowance of the original application, and, as provided in Section 4897, upon the hearing of renewed applications, abandonment is considered *as a question of fact*. No *presumption* of abandonment arises from mere lapse of time, but must be established by proof.

In the case at bar the Court of Appeals does not hold that the Chapman and Chapman original application was abandoned by failure to prosecute it according to law, as there is no basis for any such contention. Neither does the court hold that Chapman and Chapman specifically abandoned the subject-matter incorporated in their divisional application. It clearly could not so hold, because, as shown by the record, their divisional application was filed while their original application was still pending, and, moreover, the claims made by Chapman and Chapman in their original application directed to the bearings of the pump shaft were withdrawn in deference to a requirement for division made by the Examiner, with a specific reservation that they would be incorporated in a divisional application. The Court of Appeals, however, goes further and holds that while the *application* was not abandoned, the *invention* which formed the subject-matter of that application was abandoned, and in support of this inconsistent position rules that the section of the statutes relating to abandonment of invention must be disregarded and that Section 4894, which merely relates to abandonment of applications, applies.

Abandonment of an *invention* is a much more serious thing than abandonment of an *application*. The Commissioner in his opinion referred to the question of reissue merely as showing by analogy that the courts in many cases have not regarded a delay of two years in applying for a reissue as establishing abandonment of the invention not claimed in the original patent, and in the same way he referred to Section 4886, which permits an applicant to file his application within two years after a patent has been granted to another for the same invention, or after it has been published, or put into public use, and works an abandonment of *invention* after a delay of two years.

His conclusion that

> "the diligence of one who, having already filed, copies its claims within two years of the granting of a patent, cannot be inquired into without imposing a condition more strict than is imposed by Sec. 4886 upon one who does not file his application until after the rival patent has been granted,"

is entirely sound, and shows that the rule announced by the court in the Rowntree-Sloan case was much more drastic than the provisions of Section 4886, or the rule applied in reissue cases, and therefore should not be adhered to. The application of that rule works an abandonment of the *invention*—not of the *application*, and, moreover, leaves the applicant no opportunity to explain or excuse his delay, which, in the case at bar, was only such delay as Section 4894 permits, and this notwithstanding the fact that where an applicant has allowed his application to become abandoned by failure to prosecute within one year, he is expressly permitted to excuse his delay, and by doing so to the satisfaction of the Commissioner, may revive his application. It is the prerogative of Congress to prescribe the rules of procedure governing applications for patents, and where Congress has spoken, the courts, it is submitted, cannot disregard the plain meaning of the statute.

The Court of Appeals is evidently desirous of expediting the prosecution of applications for patents, and what it considered to be an abuse of the privilege of amendment in the Rowntree-Sloan case was no doubt the motive which impelled it to the announcement of the ruling in that case; but, as pointed out by this court in the case of *U. S.* v. *Am. Bell Tel. Co., supra,* the views of any court as to the wisdom of a public policy instituted and approved by Congress and legally enacted are immaterial. The courts are bound to follow the law as it exists, and they have no authority to change it. In the case of *Bos-*

ton Store v. *American Graphophone Co. et al.*, decided by this court March 4, 1918, Mr. Chief Justice White in delivering the opinion of the court said:

> "Moreover, so far as the argument proceeds upon the assumption of the grave disaster which must come to the holders of patent-rights and articles made under them from the future application of the doctrine which the cases establish, it must be apparent that if the forebodings are real the remedy for them is to be found not in an attempt judicially to correct doctrines which by reiterated decisions have become conclusively fixed, but in invoking the curative power of legislation."
>
> *Boston Store* v. *Am. Graphophone Co. et al.*, 249 O. G., 985, p. 988; 246 U. S. 8 (pp. 25-6).

The rule announced in *Rowntree* v. *Sloan* and applied in the case at bar, being clearly in contravention of the statutes, should, therefore, be disapproved and overruled.

Estoppel.

An interference is a proceeding instituted for the sole purpose of determining the question of priority of invention as between the parties thereto. (*Lowry* v. *Allen*, 203 U. S., 476.)

It follows that matters of estoppel may be considered in an interference only in so far as they arise *inter-partes* and affect the question of priority. For example, if one of the parties has abandoned the invention to the public, either actually or constructively, that fact would not enter into the question of priority and could not be considered in an interference proceeding. (*Norling* v. *Hayes*, 37 App. D. C., 169, pp. 177, 178. *Slingluff* v. *Sweet & Spinasse*, 45 App. D. C., ——; 230 O. G., 659.)

In the case at bar, Chapman & Chapman being admittedly the first inventors of the issue, no question of estop-

pel *inter-partes* could arise which by any possibility could affect the question of priority of invention. Even if they had formally assigned the invention to Wintroath, that would not entitle him to priority, as he could not qualify under the statutes, since he did not conceive the invention until long after Chapman and Chapman's application was filed. But the Court of Appeals held that, because Chapman and Chapman did not introduce into their application the precise claims of the interference issue until one year and eight months after the Wintroath patent was issued, they were guilty of laches, and that such laches created an estoppel which conferred priority upon Wintroath and validated his obviously invalid patent,—a most remarkable innovation in patent law. The discussion of this subject in the opinion is somewhat inaccurate and confused. For example, the court says:

> "In support of this, (the claim of laches or estoppel) appellant points to our decision in *Rowntree* v. *Sloan*, 45 App. D. C., 207, where it was held that, in analogy to the time allowed by the statute for amendments to applications (R. S., Sec. 4894), a failure for more than one year to make a divisional application amounted to laches and barred its allowance."

In *Rowntree* v. *Sloan* there was no question of a divisional application and no such ruling was made. Sloan made the claims of the issue in his original and only application, but made them three years after the Rowntree patent was issued. Moreover, the question of laches or estoppel was not presented to the court in that case. It was raised in the original assignment of errors, but was withdrawn as untenable in the brief filed in behalf of Rowntree, and was not argued. The only point urged in behalf of Rowntree was that Sloan had no right to claim the issue because it was not disclosed in his application, and that point was sustained on the appeal. The court, however, *sua sponte* announced the theory of estop-

pel as a further ground for awarding priority to Rowntree. Clearly, therefore, the decision on the latter point was pure *dictum*.

Continuing the court says:

> "The Commisioner refused to follow the decision on that point, saying it was *obiter* and ruling that in his judgment the time should be two years instead of one, on the analogy of the statute which gives an inventor that length of time after a patent has emerged to another for his invention before it is necessary for him to file his own application. He therefore decided that the appellees were not chargeable with laches and awarded them priority. . . .
>
> "Nor do we believe that the two year rather than the one year period should prevail. *True, there is some resemblance between the divisional application of the Chapmans and an application of an inventor whose invention has been patented to another, but it is not as intimate as that which exists between their application and one for leave to amend.*" (Rec., p. 134.)

We confess our inability to follow the reasoning of the italicized portion of the foregoing quotation. Chapman and Chapman's divisional application was not one "for leave to amend," as the court seemed to think, but was a regularly pending application, filed in response to a ruling of the Examiner and conforming strictly to the rules and practice of the Patent Office as they have existed for generations, and the claims of the interference issue were made in the divisional application as filed so that there was never any motion "for leave to amend." Furthermore, the case at bar is *precisely* the case "of an inventor whose invention has been patented to another," instead of one having "some resemblance" to such a case. That the court considered Chapman and Chapman to be applicants for "leave to amend" is further evident from the statement in the opinion that "Their application, *if granted*, would be in the nature of an amendment

to their parent application and would date back to it (*Lotz* v. *Kenney*, 31 App. D. C. 205)." Their divisional application was regularly filed and *did*, under the rules and practice, date back to the date of their parent application. The "if granted" of the opinion shows that the court entirely misconceived the facts and the law, and supposed that Chapman and Chapman were asking leave to file a divisional application; that it has the jurisdiction and authority of a court of equity to consider and determine whether or not they were equitbly entitled to file such application, and that it was competent for it to base an award of priority of invention on a supposed estoppel which had no relation whatever to that question.

The decision of the Court of Appeals in this case is further unwarranted and unsound because it imposes upon applicants for patents a duty which is distinctly imposed by statute upon the Commissioner of Patents.

Sec. 4904, Rev. Stat., which provides for the declaration of interferences, specifically directs that the Commissioner *shall give notice* to the applicants whenever an application is made for a patent which *in his opinion* would interfere with any pending application, *or with any unexpired patent*, and provides that *he* shall thereupon direct the primary examiner to proceed to determine the question of priority of invention. The statute does not charge an applicant with the duty of determining whether or not in *his* opinion the invention for which he seeks a patent conflicts with any other pending application or unexpired patent, but specifically *imposes that duty upon the Commissioner*, and requires that notice shall be given not only to the applicants, but to the patentee also in the case of an unexpired patent.

This precise question was considered by this court in the recent case of *Ewing* v. *U. S. ex rel Fowler Car Co.*,

the opinion in which fully sustains our contention. In that case the court said:

> "The mere fact of asserted antagonism does not put the proceedings in motion, is the contention. There must be the precedent and superintending judgment of the Commissioner. The law requires, it is said, his opinion to be exercised upon the effect of a conflict in applications, and such indeed is the language of Sec. 4904. It provides that 'whenever an application is made for a patent which, *in the opinion** of the Commissioner, *would interfere with any pending application** . . . . he shall give notice thereof . . . . and shall direct the primary examiner to proceed to determine the question of priority of invention.' . . .
>
> "If it could be conceded that there is antagonism between §4904, and the rules, the former must prevail. *Steinmetz* v. *Allen,* 192 U. S. 543, 565. But there is no antagonism. The former provides that 'whenever an application is made for a patent which, *in the opinion** of the Commissioner, would interfere with any pending application . . . . . he shall direct the primary examiner to proceed to determine the question of priority of invention.' The section, therefore, commits to the opinion (judgment) of the Commissioner the effect of an application upon a pending one—whether it will interfere with a pending one; something more, therefore, than the fact of two applications, something more than the mere assertion of a claim. The assertion must be, in the opinion of the Commissioner, an interference with another. And it is this other that is first in regard, not to be questioned except at the instance of the Commissioner by an exercise of judgment upon the circumstances."
>
> *Ewing* v. *Fowler Car Co.,* 244 U. S., 1 (pp. 8 and 10).

The Court of Appeals, however, disregarding the plain terms of the statute, holds that applicants are charged with constructive notice of all the claims of

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* The italics are in the text.

all unexpired patents; that it is an applicant's duty to discover whether or not any such claims interfere with the invention for which he seeks a patent, and that his failure to make such claims within one year after the patent containing them was issued constitutes laches which forever estops him from making them. In other words, the Court of Appeals holds that an applicant is to be adjudged guilty of laches because of the failure of the Commissioner to perform a duty with which he is expressly charged by law, and this on a theory of constructive notice plainly in conflict with the law. As we have shown, section 4904 specifically provides that the Commissioner *shall give notice* in interference cases, and obviously it is not competent to nullify the statute by a theory of *constructive* notice. Moreover, Sec. 4900, Rev. Stat., requires patentees and all persons making or vending any patented article for or under them to give sufficient notice to the public that the same is patented by appropriate marking of the patented article, so that evidently the law does not charge the public with constructive notice of the scope of patented claims.

The theory of constructive notice applied in the case at bar is peculiarly inequitable and unjust because the Wintroath application was filed while the Chapman and Chapman application was pending under prosecution in the Patent Office, and the patent was issued to Wintroath without any notice having been given them of interfering subject-matter. To charge Chapman and Chapman with laches based on constructive notice of a patent inadvertently issued during the pendency of their application is, therefore, to penalize them for the mistake of the Patent Office, since, relying on the statutes and the rules of the Office, they had every right to assume that during the pendency of their application

no patent would issue for interfering subject-matter. It has long been established law that a patent issued inadvertently has no other or better standing for purposes of interference than a pending application, and it logically follows that an applicant can no more be required to make the claims of an inadvertently issued patent within any arbitrary time limit not authorized by statute than he can be required, *without notice,* to make the claims of a copending application within such an arbitrary time limit. The present practice of the Patent Office provides for suggesting claims to an applicant with notice that such claims must be made within a certain time, in default of which the applicant will be considered to have disclaimed them, but in all such cases the claims suggested are presented to the applicant *so that he has notice of them.* This was *not* done in the case at bar. It is submitted, therefore, that there is absolutely no justification for the charge of laches against Chapman and Chapman, even if it were material to the question of priority.

The rule announced by the Court of Appeals in the Rowntree-Sloan case is judicial legislation because it in effect amends the statutes, and particularly Sec. 4904, by fixing an arbitrary time limit within which an applicant must make the claims of an unexpired patent if he desires an interference with the patentee. The statute says "*any unexpired* patent," but the Court of Appeals says "any patent issued not more than one year before the applicant made the claims thereof," and attempts to justify the one-year limit by analogy to the law relative to amendment of applications. We have shown that there is no analogy between the two situations, since the effect of the Rowntree-Sloan rule is to work an abandonment or absolute forfeiture of the *invention,* whereas failure to amend merely works the

abandonment of the *application*, with a possibility of revival for good cause shown. Moreover, the Rowntree-Sloan rule undertakes, as in the case at bar, to transfer the quality of first inventorship from the actual first inventor to a junior inventor who cannot qualify under the statutes. As the statutes confer the right to a patent only on the first inventor, only Chapman and Chapman may lawfully obtain a patent for the subject-matter of the issue, and there is no authority for divesting them of that right and transfering it to a confessedly later inventor merely because they did not define their invention in some particular phraseology before the expiration of an arbitrary time limit. If Chapman and Chapman lost their right to a patent by failing to make certain specific claims within one year or any other period, they lost it to the public and not to Wintroath, as he, having admitted that he was not the first inventor, stands in no different or better relation to the invention than the rest of the public. It follows that Chapman and Chapman owed no duty to him, and consequently no estoppel in his favor could arise through any delay on their part in making the claims of the issue.

Counsel for Wintroath complain that the grant of a patent to Chapman and Chapman would interfere with the business which the owners of the Wintroath patent have entered upon, and in which they allege they have expended considerable money. The answer to this complaint is, *first*, it has nothing whatever to do with the question of priority of invention; *second*, there is no evidence sustaining counsel's allegations, which are based merely on Wintroath's preliminary statement (Rec., p. 55), but Patent Office Rule 117 specifically provides that "the preliminary statement can in no case be used as evidence in behalf of the party making it";

third, the grant of a patent conveys no right to use, but merely the right to exclude, and therefore Wintroath had no right to assume that the grant of a patent to him authorized him to use the invention described therein; *fourth,* according to counsel's own statement, the owners of the Wintroath patent embarked in the business in May, 1912, but did not file their application until December, 1912, and their patent was issued in November, 1913, so that they had been in the business for a year and a half before the Winroath patent was issued. In engaging in such business Wintroath's assignee took only the chances that every other manufacturer takes who engages in manufacturing; *fifth,* the public does not owe its knowledge of the invention to Wintroath, or his assignee, but rather to Chapman and Chapman, as they are ready to prove if necessary, and it is not unlikely that Wintroath had full knowledge of what they had done before he entered the field.

Second Question.

On an interference appeal from the Patent Office under the Act of February 9, 1893 (27 Stat. L., 434, Ch. 74), is the jurisdiction of the Court of Appeals of the District of Columbia confined to a determination of the question of priority of invention, and may the question of whether a statutory bar exists to the grant of a patent to the actual first inventor of the subject-matter of the issue be determined on such appeal?

This precise question was answered in the negative by this court in *Lowry* v. *Allen* as follows:

> "The statute is explicit. It limits the declaration of interferences to the question of priority of invention. Section 4904 provides that in case of conflict of an application for a patent with a pending application or with an unexpired patent (as in the

case at bar), the Commissioner shall give notice thereof, 'and shall direct the primary examiner to proceed to determine the question of *priority of invention*' . . . We concur with the views expressed, that the statutes provide only for appeals upon the question of priority of invention. Appeals on other questions are left to the regulation of the Patent Office under the grant of power contained in Section 483."

Lowry v. *Allen,* 203 U. S., 476 (p. 482).

Obviously the existence of a statutory bar has nothing to do with the question of priority, and the Court of Appeals has itself repeatedly so held. See:

Norling v. *Hayes,* 37 App. D. C. 169 (pp. 177-178), and cases therein cited.

Slingluff v. *Sweet & Spinasse,* 45 App. D. C., —; 230 O. G. 659.

Frost v. *Chase,* 37 App. D. C. 179.

The Court of Appeals, however, attempts to distinguish the instant case from one involving a statutory bar on the ground that a question of laches and not one of a statutory bar is here involved, and by way of illustration cites a supposititious case. We quote as follows from the opinion (Rec., p. 135):

"The dispute in an interference case is in respect to which one of the disputants is entitled to priority concerning a given alleged invention (*Foster* v. *Antisdel,* 14 App. D. C. 552, 555; *Prindle* v. *Brown,* 24 App. D. C. 114). Let us suppose that A and B are the contestants. If it be held that as between them A conceived and reduced the invention to practice in 1915, but that B never thought of it until 1916, it would profit B nothing to show that A could not secure a patent for the invention, either because it was not patentable, or his right to a patent was barred by the statute of public use, or for any other reason. Therefore such a showing would be immaterial. These infirmities in A's situation would present questions between him and the

> Patent Office in which B as an applicant would have no interest whatever. They would arise in a proceeding different from an interference proceeding, and one in which the parties were not the same. Consequently our holdings that the bar of the statute of public use, lack of patentability and similar questions are not justiciable in an interference proceeding, is in no way inconsistent with the holding that laches is."

The court was unhappy in its illustration, as its suppositious case is precisely the case at bar, and therefore by the court's own reasoning it had no jurisdiction.

It was not contended in the court below that laches could not be considered in an interference *where it went to the question of priority*, as the court seems to suppose. We fully agree that in such cases it is quite material, but in the case at bar the question of priority is foreclosed by Wintroath's admission in his preliminary statement that he did not conceive the invention until long after Chapman and Chapman had filed an application for patent fully disclosing and broadly claiming it. In such a state of facts, as this court held in the case of *Ewing* v. *U. S. ex rel. Fowler*, 244 U. S. 1 (p. 9)

> "If there are such possibilities in some interferences they are precluded in petitioner's case. . . . The conceptions were thus established to be identical and that that of Fowler did not come to him until some months after the filing of the other application. And it is to be observed that the *priority was complete.*"

The Court of Appeals in the opinion filed refers to a number of cases in which ancillary questions were considered in interferences, but in each of the cases cited such questions had a direct bearing on that of priority. The court, as is apparent from the summary of such cases in the opinion, failed to appreciate the distinction between laches in completing an invention, and aban-

donment of a completed invention. Chapman and Chapman having reduced their invention to practice by filing their application for patent before Wintroath conceived the invention, laches could not enter into the question of priority as between the parties. Indeed, there could be no question of priority between them. The only question was whether or not Chapman and Chapman had abandoned the invention to the public. They certainly could not abandon it to Wintroath because he could not qualify under the statute as the first inventor. If Chapman and Chapman had not abandoned the invention they were entitled to their patent, regardless of Wintroath's patent, and Wintroath does not enter into that question at all.

The decision of the Court of Appeals, therefore, in effect holds that that court has jurisdiction to consider the question of the statutory bar of abandonment on an interference appeal, notwithstanding the ruling to the contrary of this court in *Lowry* v. *Allen, supra.*

In *Bate Refrigerating Co.* v. *Sulzberger,* this court said:

> "If Section 4887 of the Revised Statutes is so worded as to express clearly the intention of Congress, the court must give effect to that intention. But even if the statute be not so explicit as to preclude construction; if upon applying to it the established rules of interpretation; if looking at it in the light of previous legislation on the subject; if there be reasonable ground for adopting either one of two constructions; this court, without departing from sound principal, may well adopt that construction which is in harmony with the settled practice of the executive branch of the government, and with the course of judicial decisions in the Circuit Courts of the United States; especially, if there be reason to suppose that vast interests may have grown up under that practice and under judicial decisions,

which may be disturbed or destroyed by the announcement of a different rule."

Bate Refrigerating Co. v. *Sulzberger*, 157 U. S. 1 (p. 34).

The foregoing remarks apply specifically to the case at bar. The fact that the Patent Office and the courts have for more than forty years harmoniously interpreted and applied the statutes bearing upon the facts of this case is sufficient ground for assuming that the practice so established is sound and should not be overturned.

The rule which the Court of Appeals undertook to establish in the Rowntree-Sloan case, and which it applied in the case at bar, being clearly in contravention of the statutes and of the long established practice of the Patent Office and of the courts, and being moreover in direct conflict with the decisions of this court in *U. S.* v. *Am. Bell Telephone Co.; Lowry* v. *Allen; Ewing* v. *U. S. ex rel. Fowler*, and *Boston Store* v. *Am. Graphophone Co.* should accordingly be disapproved and set aside, the judgment of the Court of Appeals reversed, and the cause remanded with directions to enter judgment of priority in favor of Chapman and Chapman.

Respectfully submitted,

JOHN L. JACKSON,
ALBERT H. ADAMS,
Counsel for Petitioners.

Chicago, September, 1919.

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IN THE

Supreme Court of the United States.

October Term A. D. 1919.

MATTHEW T. CHAPMAN and
MARK C. CHAPMAN,
Petitioners,

vs.

JOHN A. WINTROATH,
Respondent.

BRIEF IN BEHALF OF RESPONDENT.

Statement of the Case.

This cause comes up by writ of certiorari directed to the Court of Appeals of the District of Columbia, and it relates to an interference between an unexpired patent and a pending application for patent filed at a relatively late date and containing claims copied from the issued patent for the purpose of demanding an interference.

Respondent does not subscribe to the Petitioner's statement of the questions of law involved, but states that the following correctly represents the real issues of law:

QUESTIONS INVOLVED.

1. Is a patentee who has been in undisturbed possession of his duly granted rights for a period of years to be deprived of said rights by a rival inventor who, although the earlier to file an application disclosing, inter alia, the subject matter of said patent, never claimed the said subject matter until twenty months after the issue of the said patent, at which time, over six years after his original filing date, he filed an alleged divisional application for the purpose of copying therein claims from the said issued patent directed to such subject matter, and is such an applicant to be rewarded by the grant of a *second patent* on the same subject mater which will have the effect of *extending the monopoly to which the public has already been subjected* for a considerable period by the grant of the first patent; or is the applicant guilty of laches such as debars him from asserting a claim of prior inventorship; the lack of diligence being further aggravated by the fact that the invention was admittedly put into public use by the applicants (Chapman & Chapman) before they even filed their original application?

(In the opinion complained of, the Court of Appeals, D. C., applied a one year rule as a measure of diligence in such a case, in analogy with the statutory rule requiring amendment of an application within one year after the receipt of Office Action.)

2. Is the jurisdiction of the Court of Appeals of the District of Columbia on appeals in Interference contests limited to a determination of the question of priority as between rival inventors strictly from the standpoint of time only, or may it consider and determine ancillary matters such, for example, as diligence and laches as affecting priority of invention in law?

The Court of Appeals held it was not so limited and could consider such ancillary questions. Inasmuch as the opinion of the Court of Appeals (Rec., p. 101) clearly disposes of this second question no argument will be presented, attention being merely directed to the aforesaid opinion.

SUMMARY OF FACTS.

The following is a brief statement of the history of these contestants in the Patent Office:

Chapman & Chapman

Original application filed March 10, 1909	Invention in issue disclosed *but not*
Patent thereon issued August 10, 1915	*claimed.*
Divisional Application filed July 6, 1915	Copied claims from Wintroath's patent (Twenty (20) months after Wintroath's issue date).

Wintroath

Application filed December 2, 1912.
Patent issued November 25, 1913.

Chapman & Chapman admitted (see Opinion of Commissioner Record, page 83) that it was not until July 6th, 1915, when the divisional application was filed, that they made any claims approximating those in issue—over six years after the filing date of their original application and twenty months after Wintroath's patent issued.

The subject matter of the interference is defined in claims 2, 3 and 4 of the Wintroath patent and in claims 1, 2 and 3 of the Chapman & Chapman Divi-

sional Application. It is unnecessary to consider these claims in detail. The device is a deep well pump and the claims are directed to the combination with the power shaft or pump shaft of a fluid pressure operated bearing which supports said shaft, an auxiliary bearing for sustaining the downward thrust of the power shaft, and an auxiliary bearing to receive the upthrust of the shaft.

On March 21st, 1916, the Interference was declared between the Chapman & Chapman divisional application, Ser. No. 238, 254 and the Wintroath patent (Record, pages 53 and 54) the declaration coming two years and four months after the date of the issue of the Wintroath patent.

The usual preliminary statements were filed by both parties and, Wintroath's conception of the invention being later than the filing date of the original Chapman & Chapman application, Ser. No. 482,517, the Examiner of Interferences, in accordance with Rule 114 of the Patent Office, on May 5, 1916, served notice that Judgment on the Record would be entered against Wintroath unless he should, within thirty days, show sufficient cause why such action should not be taken (Record, page 56).

On June 21, 1916, Wintroath moved for Judgment on the Record in his favor on the ground that in view of the facts of the case "Chapman & Chapman must "be held to be estopped to make the claims in issue, "and to have abandoned any right which they may "have once had thereto, and in addition it would be "against public policy and the spirit of the patent "law to permit Chapman & Chapman at this late date "to deprive Wintroath of the fruits of his diligence "and thereby permit an unlawful extension of the "patent monopoly on the invention. (Record, pages 62 and 63.)

The motion was based on a decision of the Court of Appeals of the District of Columbia in the case of Rowntree vs. Sloan (277 O. G. 744; 45 App. D. C. 207), in which it was held that

> "Sloan's laches, in failing within a reasonable time after the issuance of the Rowntree patent to make his claims, estopped him to make them at all afterwards. If he thought these claims read upon his application, it was his duty promptly to make them; at least within the time allowed for amendment after office action (one year), and his failure to do so is fatal to his present contentions."

The Examiner of Interferences, in an opinion dated July 8, 1916 (Record, pages 72, 78) followed the doctrine announced in Rowntree vs. Sloan and awarded priority to Wintroath.

An appeal was then taken by Chapman & Chapman to the Board of Examiners in Chief, who, in an opinion dated November 18, 1916 (Record, pages 80 and 81) also followed Rowntree vs. Sloan and affirmed the decision of the Examiner of Interferences.

Chapman and Chapman then appealed to the Commissioner in person, who in an opinion (Record, pages 82 to 86) reversed the Board of Examiners in Chief, holding a two year rule of diligence was controlling.

Wintroath then appealed to the Court of Appeals of the District of Columbia (Record, page 88) and the Court of Appeals in an opinion by Mr. Chief Justice Smyth (Record, pages 164 to 167) reversed the Commissioner of Patents and awarded priority to Wintroath, modifying the ruling in Rowntree vs. Sloan to a one year rule of diligence *unless the applicant could give satisfactory reasons justifying a longer delay.*

Thereafter Chapman & Chapman petitioned this Honorable Court for a *writ of certiorari* which was granted.

SUMMARY OF ARGUMENT.

1. While the patenting of an invention is purely Statutory, the Statute has been uniformly construed in the light of the underlying purpose of the patent system—the promotion of the progress of science and the useful arts.

Kendall vs. Winsor, 21 How. 322-328, and cases cited in following paragraph.

2. Diligence is axiomatic and there is a time limit within which claims to a particular invention shown, but not claimed in an application, may be added.

Ex Parte Dyson, 232 O. G. 755.
In re Fritts, 45 App. D. C. 211.
Victor Talking Machine vs. Edison, 229 Fed. 999.
Christensen vs. Noyes, 15 App. D. C. 94.
Bechman vs. Wood, 15 App. D. C. 484.
Skinner vs. Carpenter, 36 App. D. C. 178.

3. The Statute itself lays down a *pre*-application rule of diligence and a *post*-application rule.

See Secs. 4886 & 4887, and Sec. 4894 R. S.

4. Where an applicant has an application showing, *inter alia*, but not at any time claiming a particular feature pending in the Patent Office for years he should proceed at least within one year after the issuance of a rival patent for the same invention, to copy claims therefrom for the purpose of an Interference, by analogy with Sec. 4894 R. S.

5. The issue of a patent is constructive notice to the public of its contents.

Boyden vs. Burke, 14 How, 575-83.

6. If Chapman & Chapman's divisional application be considered independently of the present application, they are out of Court in their own admission of a prior public use of more than two years.

See Brief, pp. 13 and 14.

If considered as a continuation of the parent application, *post*-application rules of diligence apply and they are guilty of lack of diligence.

7. Chapman & Chapman were never "regularly" prosecuting an application for the invention, and there is no basis in the Statute or authority for the proposition that the mere presence of a drawing or description of a feature in an application constitutes a reduction to practice thereof such as will defeat a later inventor but earlier patentee.

Pittsburgh vs. Beler, 228 Fed. 683.
Saunders vs. Miller, 33 App. D. C. 456.

ARGUMENT.

There Is a Time Limit Within Which Claims May Be First Presented.

The patenting of an invention is a purely statutory proceeding, but while an applicant is entitled to all of the rights conferred by the Patent Statues, the Statutes have been uniformly construed in the light of the purpose underlying the entire patent system, which is to "promote the progress of science and the useful arts," that is to say, the public welfare.

Kendall vs. Winsor, 21 How. 322, 328, and other cases hereinafter cited.

Among other things, it has become axiomatic that the interests of the public, the real beneficiary of the patent system, are best served by the exercise of diligence in the prosecution of patent applications. The Patent Office now requires (Commissioners Order No. 2210 of July 6/15, 216, O. G. 1), that applications must be placed in condition for final action i. e. in condition for allowance and issue, or final rejection, within three years. See Appendix.

It is also generally recognized that, while the making of claims in a patent application is only one of a number of incidents to the patenting of an invention, there is a limit to the length of time within which claims directed to a particular feature or features of the invention described in the specification or to one or more of a number of different inventive thoughts disclosed, may be inserted into a pending, a renewal or a reissue application.

The reasons for the foregoing are given in the following selection of typical cases in point:

Ex Parte Dyson, 232 O. G. 755.
In re Fritts, 45 App. D. C. 211.
Victor Talking Machine Co. vs. Thos. A. Edison, Inc., 229 Fed. 999.
Christensen vs. Noyes, 15 App. D. C. 94.
Bechman vs. Wood, 15 App. D. C. 484.
Skinner vs. Carpenter, 36 App. D. C. 178.

In Ex Parte Dyson, *supra*, the Commissioner pointed out with reference to applications pending in the Patent Office for a period of years while other inventors are perfecting similar devices, that they

"are, in effect hidden traps for later inventors, who, without knowledge of their existence, in good faith produce similar inventions and apply for

patents, only to find their efforts anticipated and their labor lost. Patents granted are carefully examined by the owners of these old applications to see if some claim or claims of the patent can by arguable interpretation be predicated upon the structure of some one of these old cases. If this is found to be possible, the claim is presented in the old application and an interference is demanded. By reason of the old filing date an award of priority adverse to the patentee sometimes results and the Office is placed in the position of having issued a patent with invalid claims.

When these applications shall have finally issued into patents, many of them will, presumably, contain broad claims dominating better devices and mechanisms developed during the years of their pendency."

In the case of In re Fritts, *supra*, the Court of Appeals said:

"We frequently have had occasion to observe that inventors are quite prone to overlook the fact that the true policy and ends of the patent laws enacted under this government are disclosed in that article of the Constitution, the source of all those laws, viz. "to promote the progress of science and the useful arts,' contemplating and necessarily implying their extension and increasing adaptation to the uses of society. It was his duty, within a reasonable time after the issuance of those patents, to assert his claims thereto, to the end that an interference might be declared and the issue of priority determined. By failing to assert such claims he must be held to have abandoned them. When the element of *diligence* or *good faith* in an applicant is lacking, there is no valid reason for such a construction of the patent laws as would effect an extension of the limited monopoly granted upon prescribed conditions, which include those very elements. *Inasmuch as even diligence and good faith do not entitle one to a monopoly upon*

a monopoly, it is not perceived why delay and the lack of good faith should do so." (Emphasis ours.)

The Circuit Court of Appeals of the Second Circuit in the case of Victor Talking Machine Co. vs. Thomas A. Edison, Inc., *supra*, held with reference to an applicant who delayed while others independently developed the art along similar lines:

> "To let him reserve his patent till the trade independently develops and then to pounce upon it for a full term would seem to violate the conditions upon which his grant depends and to convert the system into a mere means of checking industry. * * * * The case certainly suggests a purpose to monopolize that invention still further by reserving in the Patent Office patents upon other similar machines known long before. Whether this be true or not, the practice is so obviously mischievous that the courts should discourage it as much as possible."

In *Christensen vs. Noyes, supra,* the Court of Appeals, District of Columbia, Noyes *renewed* a forfeited application and inserted therein claims from the Christensen patent which had issued in the meantime and demanded an interference, and among other things the Court decided that Noyes had not been diligent in filing his renewal, and therefore found against him.

In *Bechman vs. Wood, supra, the* same Court held that it was not permissible to add by amendment at a later date, broad claims, which dominated a specific structure which in the meantime had been patented to another.

In the case of *Skinner vs. Carpenter, supra,* the same Court held that a patentee who was not diligent in filing a *reissue application* containing claims inserted for the purpose of obtaining an interference with an-

other patentee, had lost his right to make the interfering claim.

The difficulty which presents itself in the determination of what is a reasonable length of time within which action should have been taken in this case is that no specific provision of the Statutes in terms directly takes care of such a situation. The Patent Office in the opinion (Record, page 83) of the Honorable Commissioner of Patents took the position that a two year rule of diligence is controlling by analogy with Section 4886 and Section 4897 of the Statutes (respectively found on pages 17 and 19 of petitioner's Brief herein), and by analogy with the two year broadened reissue rule, generally laid down by the Courts. Chapman & Chapman apparently contend for the rule announced by the Commissioner (see last paragraph of page 12 of petitioner's Brief herein).

On the other hand, Wintroath takes the position which was taken by the Examiner of Interferences, the Board of Examiners in Chief and the Court of Appeals that a one year rule of diligence should be controlling by analogy with section 4894 of the revised Statutes (printed on pages 18 and 19 of the Petitioner's Brief.)

One Year Rule of Diligence is Sound.

The Statute itself lays down a *pre*-application rule of diligence and a *post*-application rule of diligence. Thus, Sec. 4886 (printed in Petitioner's Brief, page 17) states that an inventor may obtain a patent by filing his application within *two years* of publication and public use or sale, *provided, however, the invention is not abandoned*; and Sec. 4887 (Petitioner's Brief, page 18) provided that "no patent shall be granted on an

application for patent for an invention" which had been published or in public use or on sale "more than two years before the date of the actual filing of the application" * * *

Section 4894, however (Petitioner's Brief, pages 18 and 19) requires a responsive amendment of a pending application within one year after receipt of office action unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable, in which connection it is very significant that theretofore the Statute (Sec. 4886 before the amendment of March 3, 1897) allowed two years for amendment.

Ordinarily a divisional application is deemed a continuation of the parent or original application and is in the nature of an amendment of the original and dates back to the original. (See *Lotz vs. Kenny*, 31 App. D. C. 205; *Von Reclinghausen vs. Dempster*, 34 App. D. C. 474, and the cases therein cited.)

The reason a divisional application is ordinarily given the benefit of the filing date of the parent application is that a presumption arises upon the filing of the latter of the *completion* of the invention shown and described and it is also because of this presumption of completion upon filing that the Statute requires a diligent prosecution of pending applications by limiting the time for responsive amendment to one year after Office action.

Now Chapman & Chapman had constructive notice not only by publication in the Official Gazette of the issue of the Wintroath patent containing the very claims of Interference, but also by the issue of the Patent itself (see *Boyden vs. Burke*, 14 How. 575-83), twenty months before the date of the filing of their divisional application, and they should at the very least have filed their divisional application within one year

after this notice that a rival was in the field. Stated in other words the issue of and the publication of the issue of the Wintroath patent should be considered as tantamount to an Office action and action or amendment on their part should have been taken within one year by analogy to Sec. 4894.

To hold otherwise would be to place Chapman & Chapman's divisional application in the category of an original application, which for reasons to be shortly pointed out is believed to be a construction, which, if accepted, is fatal to the Chapmans.

Chapman and Chapman must rely on their original application, that is to say they must rely on the divisional application as being a continuation of the parent application, for the reason that if this were not the case they could not make the oath to the divisional application required by the Statute, namely, that the invention had not been in public use more than two years before the date of execution of the divisional application and its filing.

In support of this we direct attention to the fact that Chapman & Chapman *admit* that they had the invention in public use and on sale, not only long before Wintroath's filing date (December 2, 1912, two years and seven months before the filing of their divisional application), but also *before* they even filed their parent application (March 10, 1909).

See admission contained in upper half of page 58 of Petitioners' Brief before this Honorable Court. Also page 44 of their Brief.

The language there used plainly refers to the same admission which was contained in Chapman & Chapman's Brief before the Board of Examiners in Chief, page 20, in the following language:

"Consequently it does not lie in the mouth of

Wintroath on this proceeding to deny that Chapman & Chapman's actual reduction to practice of the invention of the issue, and *their public use thereof, occurred prior to the filing not only of Wintroath's application but also of Chapman & Chapman's original application,* which facts must, for the purposes of this motion, be considered so proven." (Emphasis ours.)

From the above it must inevitably follow that if Chapman & Chapman's divisional application be considered independently of the parent application, i. e. in the category of an original application, as is contended by the Chapmans (Petitioner's Brief, page 10), then they are out of Court on their own admission that the invention had been in public use by them more than six years before the filing of their divisional application, and this public use is a bar to their obtaining a patent.

On the other hand, if the divisional application be considered as a continuation of the parent application, then logically it must follow that the diligence they must show is that which is reasonably to be expected from an inventor *after* his application has been filed, and what could be more reasonable than giving an applicant one year's time after the issue of a rival patent within which to copy claims from that patent, when such applicant has already had on file for four years and eight months prior to the issue of such rival patent, an application, which, while showing the invention in Interference never contained any claims directed thereto? This would give Chapman and Chapman a total of five years and eight months (5 years 8 months) from the original filing date within which they could have made the claims which, it is submitted, would be giving them the utmost limit of consideration.

It is, therefore, submitted that the Court of Appeals was correct in deciding this case by analogy with Section 4894 of the Statutes.

The Commissioner of Patents, however, totally ignoring the fact that Chapman & Chapman admitted a public use of more than six years before the filing of the divisional application, held that it was entitled to the same consideration as an original application and that the case should be decided by analogy with Section 4886 (two years public use or publication); that is to say, he argued as follows:

> "In the second place, an inventor after another has patented the invention may wait up to two years before filing his own application therefor (Revised Statutes, Sec. 4886) * * * * *
>
> No reason is seen why a stricter rule should be laid down to regulate the conduct of an inventor who has already filed his application at the time when a rival patent is granted than would be applied to one who filed after the rival patent was granted."
>
> (See Petitioner's Brief, page 7.)

This, it seems to Respondent, totally ignores not only the aggravated facts of this case, but also the effect of Section 4894 which lays down post-application diligence as one year and *presumes abandonment of the application* when no responsive amendment is made within the year from Office action. In other words, it would allow an applicant to take advantage of *pre-application* rules of diligence, when as an actual matter of fact, in order to have any standing at all, he must place reliance on the fact that he is *already in the Office with an application.* It is manifestly inconsistent for Chapman & Chapman to claim on the one hand the benefit of Patent Office rules relating to divisional applications, and on the other hand the benefit of *pre-application rules.*

Furthermore, the question arises how long can an applicant who has on file an application showing among others, but not claiming a specific invention, delay after the issue of a rival patent on the same invention in adding claims thereto before constructive abandonment of the application as to the particular invention takes place? It would seem that, since the public is put on notice as to the contents of all patents as they issue (*Boyden vs. Burke*, 14 How. 575-83), constructive abandonment in such cases would take place within one year by analogy to Section 4894, and here Chapman & Chapman's original application as to the particular invention would have become abandoned because of their failure to make any attempt to claim the particular invention until more than six years after their filing date and twenty months after Wintroath's patent issued.

To avoid this horn of the dilemma Chapman & Chapman would have to and do attempt to consider the divisional application as standing on its own merits, as though an original application, in which case Chapman & Chapman admittedly could not make the proper oath, as before pointed out.

The effect of the Commissioner's holding is that an applicant can at any time within two years after the issue of a rival patent, copy claims from the issued patent, even though he never before presented any claims to the particular invention, and this *no matter how long the applicant has been in the Office with his application.*

This constitutes a holding that there is no time limit within which claims may be added, which is in direct conflict with the decisions heretofore noted on pages 8-10 of this Brief, and opens the way to the very abuses so clearly pointed out therein.

It is true, indeed, as pointed out by the Commis-

sioner, an inventor may wait for two years before filing his *original* application, but where the application is a divisional one, an inventor has already undertaken to protect his invention and is presumed to have reduced it to completion, and the rule of diligence should obviously be more strict with respect to a completed invention, as compared with an invention as to which no presumption of completion arises, as is the case with all inventions previous to the filing of original application thereon. Otherwise it would be difficult to understand why Congress should distinguish between *pre*-application and *post*-application diligence, and require expedition in prosecution.

The inconsistency of the Commissioner's ruling is also emphasized by the fact that under Office Rule No. 96, the Office allows an applicant only 30 days within which to make claims suggested from a rival application for the purpose of an Interference, and if, after such notice the applicant fails to add the claims, his rights are forfeited. If 30 days' notice is sufficient to debar an applicant's right to make claims, when the Office gives notice why should it be insisted by the Commissioner that, where by operation of law, the public is put on notice of a patent at the time of issue, two years should be allowed? For the Rule, see Appendix.

In support of the two year rule of diligence, the Commissioner also made an analogy with the two year rule within which a reissue broadening the claims of a patent may ordinarily be obtained. The reissue rule, if it has any bearing at all, clearly supports Wintroath, for while *ordinarily* a delay of two years will not be treated as evidence of abandonment

Topliff vs. Topliff, 145 U. S. 156,

nevertheless, a much less length of time will be con-

sidered sufficient to debar the grant of the reissue where intervening rights have accrued.

See

Parker and Whipple Co. vs. Yale Clock Co., 123 U. S. 87.

Coon vs. Wilson, 113 U. S. 286.

Both of these cases were cited with approval in Topliff vs. Topliff, and in the first a delay of twenty (20) months and in the latter a delay of only three (3) months was held to constitute a bar to the grant.

In the present case, there are not only intervening rights but Chapman & Chapman had twenty months constructive notice thereof by operation of law.

Furthermore, if by analogy with the two year rule of Section 4886, an original applicant may delay within two years after the issue of a patent in copying claims for Interference purposes, then it would seem to be equally true that a patentee ought to be allowed to also wait two years after the issue of his patent to file a reissue application containing claims copied from a later issued patent for the purpose of an Interference. But in

Skinner vs. Carpenter, supra,

Carpenter had obtained a Patent, February 20, 1906; Skinner filed an application on July 1, 1907, on a feature shown but not claimed in Carpenter's patent, and made and sold the device, and informed Carpenter thereof; and two weeks after being thus informed, i. e. on August 9, 1907, Carpenter filed a reissue application with new claims dominating the Skinner device, and demanded an Interference with Skinner's application, which was granted.

Under the facts, however, it was held that Carpenter had lost his right by his delay to make the interfering claims. In reaching this conclusion the Court of Appeals, District of Columbia, followed *Top-*

liff vs. Topliff, and *Coon vs. Wilson, supra*, and *Farmer's Friend vs. Challenge*, 128 U. S. 506.

Chapman & Chapman also attempted to make an analogy with Section 4897 permitting the forfeiture of an application and its renewal within two years after the original allowance upon payment of the renewal fee. However, although the period of two years is provided by the Statute, it has been uniformly held that renewal must be promptly applied for and the applicant's right to renew are forfeited if another has in the meantime come into the field. See

Christensen vs. Noyes, supra,

in which it was held that although the filing of a renewal application within two years after allowance, entitled the applicant to his original application as a constructive reduction to practice he could not set up such reduction to practice, to defeat the patent of a subsequent applicant, so as to defeat his priority as the first inventor. In that case, Noyes renewed his application only two months after Christensen's later filed patent issued and nineteen months after the allowance of his original application.

It follows, therefore, that the treatment of renewal cases, as well as the treatment of reissues just considered, with respect to the matter of diligence, if anything, supports Wintroath's contention that a one year rule by analogy with Section 4894 should be controlling.

CHAPMAN & CHAPMAN NEVER "REGULARLY" PROSECUTING AN APPLICATION FOR THE INVENTION.

Fundamental Error Involved.

As to Chapman & Chapman's contention that they were regularly prosecuting an application in accord-

ance with the law and therefore following a legal remedy, in which no question of diligence short of that prescribed by Statute can arise, the answer is obvious. Claims are a necessary part of an application for patent; a drawing and a description are not of themselves sufficient to constitute an application. Can Chapman & Chapman be considered as "regularly" prosecuting an application for the patenting of an invention when they never presented any claims to the particular invention during a period of more than six years, but let that part of the application be dead in the Office for that period, apparently with no intention of ever seeking a patent thereon, until they see another in the field?

(In this connection, it is to be noted that the requirements for division made by the Patent Office (Rec. p. 42) did not relate to the specific subject matter in interference, but to other subject matter, so that the alleged divisional application is so far as it relates to the subject matter in issue is not a *bona fide* divisional application, filed in pursuance of an Office requirement for division.)

The fundamental error that lies back of the position taken by the Commissioner and by Chapman & Chapman arises out of a totally unwarranted practice which has been followed by the Patent Office without questioning for many years, namely the practice of permitting the filing of alleged divisional applications (even without a requirement for division on the part of the Patent Office) on features shown and described but not theretofore claimed in a pending application at any time during the pendency of the original application and regardless of the length of time it had been on file. This, led to the obviously mischievous practice of letting an application soak in the office for years

until the trade had independently developed the invention, when the applicant would come out with a divisional application and pounce upon the unfortunates who had proceeded to build up a business on the invention. These practices are clearly pointed out in the decisions discussed pages 9-10 of the Brief.

The practice of allowing the filing of such divisional applications arose out of the fact that it has in the past been considered, without any reservation whatsoever, that the mere showing and description of an invention along with others shown described and claimed, constituted a constructive reduction to practices of that invention.

That this is so, does not follow in all instances because the elements of good faith and diligence are essential prerequisites in the invitation extended by the patent system.

The Courts have even gone so far as to hold that the mere showing and describing of an invention in an application is *not* a constructive reduction to practice. See

Pittsburgh vs. Beler, 228 Fed. 674 (C. C. A. 3rd).

Saunder vs. Miller, 33 App. D. C. 456.

In Pittsburgh vs. Beler, Judge Buffington stated "No statute, decision or principle of the patent law is cited to us which in our view warrants the regarding the mere presence of a drawing in a patent application, lacking the essentials noted, as equivalent to a reduction to practice of the devise therein shown."

Similarly, in this case, there is no basis in Statute or authority for the proposition that the mere presence in a pending application of a feature never claimed is such a reduction to practice as will enable the applicant some six years later to file an alleged divisional

application directed to such feature for the purpose of defeating a prior patentee whose patent issued twenty months before the divisional application was filed, and of subjecting the public to an extension of the monopoly already granted at its expense upon the issue of such patent.

At the most in such a case as this, the applicant should be required to proceed within one year after another comes into the field and the analogy with Section 4894 is a sound one.

In conclusion, it is submitted that the Patent Statute cannot be accorded such a construction as would reward Chapman and Chapman's gross lack of diligence and very evident lack of good faith to the public, by the grant of another patent monopoly on a monopoly already running against the public for some years.

Respectfully submitted,

Paul Synnestvedt

for the Respondent.

APPENDIX.

Commissioner's Order #2,210, July 6, 1915:

After January 1, 1916, all applications which have been pending for more than three years or which have an effective filing date running more than three years shall be made special and any amendment or other action therein by or on behalf of the applicant which does not put the application in condition for allowance or final rejection shall be submitted to a Law Examiner for his approval of its entry.

Rules of Practice in the United States Patent Office—Rule #96:

Whenever the claims of two or more applications differ in phraseology, but relate to substantially the same patentable subject matter, the examiner, when one of the applications is ready for allowance, shall suggest to the parties such claims as are necessary to cover the common invention in substantially the same language. The examiner shall send copies of the letter suggesting claims to the applicant and to the assignees, as well as to the attorney of record in each case. The parties to whom the claims are suggested will be required to make those claims and put the applications in condition for allowance within a specified time in order that an interference may be declared. Upon the failure of any applicant to make the claim suggested within the time specified, such failure or refusal shall be taken without further action as a disclaimer of the invention covered by the claim, and the issue of the patent to applicant whose application is in condition for allowance will not be delayed unless the time for making the claim

and putting the application in condition for allowance be extended upon a proper showing. If a party make the claim without putting his application in condition for allowance, the declaration of the interference will not be delayed, but after judgment of priority the application of that party will be held for revision and restriction, subject to interference with other applications.

Whenever it shall be found that two or more parties whose interests are in conflict are represented by the same attorney, the examiner shall notify each of said principal parties and also the attorney of this fact.

CHAPMAN ET AL. v. WINTROATH.

CERTIORARI TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

No. 117. Argued January 9, 1920.—Decided March 1, 1920.

An inventor whose application disclosed but did not claim an invention which is later patented to another, is allowed by the patent law two years after such patent issues within which to file a second or divisional application claiming the invention; and this period may not be restricted by the courts upon the ground that so much delay may be prejudicial to public or private interests. P. 134. Rev. Stats., § 4886.

Such a second application is not to be regarded as an amendment to the orginal application and so subject to the one year limitation of Rev. Stats., § 4894. P. 138.

Nor can the right to make it be deemed lost by laches or abandonment merely because of a delay not exceeding the two years allowed by the statute. P. 139.

47 App. D. C. 428, reversed.

THE case is stated in the opinion.

Mr. John L. Jackson, with whom *Mr. Albert H. Adams* was on the brief, for petitioners:

An application for patent is a purely statutory proceeding, and an applicant is entitled to all the rights conferred by the patent statutes. *United States* v. *American Bell Tel. Co.*, 167 U. S. 224, 246.

Under Rev. Stats., § 4886, an inventor may obtain a patent for his invention provided, among other things, it was not patented more than two years prior to his application. Therefore, even if their original application be left out of consideration, the respondent's patent was not a statutory bar to the grant of a patent to petitioners.

Rev. Stats., § 4904, which is the statutory authority

for the declaration of interferences, fixes no time limit within which the applicant of a pending application must claim an invention already patented to another in order to obtain an interference with such patent, other than that the patent must be unexpired. Respondent's patent was unexpired, and therefore petitioners were lawfully entitled to contest priority with him.

It is not disputed that petitioners' original application fully discloses the subject-matter of their divisional application and of the interference issue, and was never abandoned or forfeited, but was regularly prosecuted according to law and the rules of the Patent Office. Therefore, considering their original application merely as proof of their priority over respondent, they are indubitably the first inventors of the issue of the interference. *Victor Talking Mach. Co.* v. *American Graphophone Co.*, 145 Fed. Rep. 350, 351; *Automatic Weighing Mach. Co.* v. *Pneumatic Scale Co.*, 166 Fed. Rep. 288; *Sundh Elec. Co.* v. *Interborough Rapid Transit Co.*, 198 Fed. Rep. 94; *Lemley* v. *Dobson-Evans Co.*, 243 Fed. Rep. 391.

Interferences are authorized for the sole purpose of determining the question of priority of invention. "The statute is explicit. It limits the declaration of interferences to the question of priority of invention." *Lowry* v. *Allen*, 203 U. S. 476; *Ewing* v. *Fowler Car Co.*, 244 U. S. 1, 11.

It follows that, inasmuch as petitioners' applications (divisional as well as original) were filed less than two years after the grant of respondent's patent, and their priority over respondent is incontrovertibly established, judgment should have been rendered in their favor. *Ewing* v. *Fowler Car Co.*, *supra*.

The rule announced in *Rowntree* v. *Sloan*, 45 App. D. C. 207, is directly in conflict with Rev. Stats., §§ 4886, 4904. For more than forty years it has been the practice of the Patent Office to declare interferences between applicants

and patentees where the applicant made affidavit showing his conception of the invention prior to the filing of the patentee's application. Rule 51 (1870); Lowery's Annotated Interference Rules, p. 7. Moreover, until the amendment of March 3, 1897, to Rev. Stats., § 4886, which introduced the words "or more than two years prior to his application," a prior unexpired patent was never a bar to the grant of a patent to an applicant who could prove his claim to priority over it, regardless of when his application was filed. *Schreeve* v. *Grissinger*, 202 O. G. 951; C. D., 1914, 49, p. 51.

Rev. Stats., § 4904, provides for the declaration of interferences between an application and any unexpired patent, so that reading the latter section in connection with § 4886, when the Commissioner is of the opinion that an interference exists between an application and any unexpired patent issued not more than two years before the application was filed, the applicant has a statutory right to the declaration of such interference, and on proving priority, to receive his patent. *Ewing* v. *Fowler Car Co.*, *supra*.

An applicant who prosecutes his application according to law and the Patent Office rules is not chargeable with laches. *United States* v. *American Bell Tel. Co.*, 167 U. S. 224, 246; *Crown Cork & Seal Co.* v. *Aluminum Stopper Co.*, 108 Fed. Rep. 845, 851; *Columbia Motor Car Co.* v. *Duerr & Co.*, 184 Fed. Rep. 893, 895.

The time when a claim is first made is immaterial, as when made it relates back to the date of filing of the application, and if made in a divisional application, it relates back to the date of filing of the original or parent application. *Lotz* v. *Kenney*, 31 App. D. C. 205; *Von Recklinghausen* v. *Dempster*, 34 *id.*, 474.

Rev. Stats., § 4894, relates to the prosecution of applications to save them from abandonment, and has nothing whatever to do with abandonment of inventions.

The effect of the ruling in this case is that petitioners

constructively abandoned their invention to respondent, a later inventor, and that such constructive abandonment occurred while they had still pending, and were regularly prosecuting, an application for patent therefor.

The patent laws do not recognize such a thing as the constructive abandonment of an invention for which an applicant has lawfully filed, and is regularly prosecuting, an application for patent. Abandonment of an invention is a question of fact, and must be proven. *Ide* v. *Trorlicht Co.*, 115 Fed. Rep. 144; *Saunders* v. *Miller*, 33 App. D. C. 456; *Miller* v. *Eagle Mfg. Co.*, 151 U. S. 186; *Rolfe* v. *Hoffman*, 26 App. D. C. 336, 340; *Kinnear Mfg. Co.* v. *Wilson*, 142 Fed. Rep. 970, 973.

Abandonment of an invention is a very different thing from abandonment of an application for patent. *Western Elec. Co.* v. *Sperry Elec. Co.*, 58 Fed. Rep. 186, 191; *Hayes-Young Tie Plate Co.* v. *St. Louis Transit Co.*, 137 Fed. Rep. 82; *General Elec. Co.* v. *Continental Fibre Co.*, 256 Fed. Rep. 660, 663.

Abandonment of an invention completed and reduced to practice by the filing of an allowable application for patent therefor inures to the benefit of the public, and not to the benefit of a later inventor. *Ex parte Gosselin*, 97 O. G. 2977 (2979); *In re Millett*, 18 App. D. C. 186 (96 O. G. 1241).

Patent Office Rules 31, 68, 77 and 171, which provide for amendment of applications within one year from the date of the last official action of the Patent Office, all relate to abandonment of applications.

The statutes relating to constructive abandonment of inventions in all cases fix a limit of two years except when the application is filed in a foreign country more than one year before application is made in this country. Rev. Stats., §§ 4886, 4887, 4897, 4920.

The rule as to constructive abandonment in the case of applications for reissue, generally, though not invariably,

fixes a limit of two years. *Miller* v. *Brass Co.*, 104 U. S. 350; *Mahn* v. *Harwood*, 112 U. S. 354; *Wollensak* v. *Reiher*, 115 U. S. 101.

The ruling in *Rowntree* v. *Sloan*, that failure of an applicant to make the claim of an unexpired patent within one year from the date of such patent estops the applicant to make such claim at all, is arbitrary because it has no foundation in law, and is illogical because, if there be any ground for invoking the doctrine of estoppel in such a case, there is no reason why it should apply in one year rather than at any other time.

There can be no question of estoppel as between petitioners and respondent because the basic conditions to create an estoppel do not exist. There was no privity of relationship between the parties. Petitioners were unaware of respondent's application for patent. Respondent was not misled to his injury by any act or failure of petitioners.

It was not petitioners' duty, but the Commissioner's, to ascertain if there was an interference, and to declare it. *Ewing* v. *Fowler Car Co.*, *supra*; Rev. Stats., § 4904; Bigelow on Estoppel, 5th ed., pp. 26–28, 585, 594–597.

Laches or estoppel in this case is not ancillary to the question of priority.

The question of actual priority of invention having been foreclosed by respondent's admission, the Court of Appeals was without jurisdiction on an interference appeal to hear and determine petitioners' right to a patent. *Norling* v. *Hayes*, 37 App. D. C. 169; *Lowry* v. *Allen*, *supra*.

Mr. Paul Synnestvedt, with whom *Mr. H. L. Lechner* was on the briefs, for respondent:

While the patenting of an invention is purely statutory, the statute has been uniformly construed in the light of the underlying purpose of the patent system—the promotion

of the progress of science and the useful arts. *Kendall* v. *Winsor*, 21 How. 322, 328.

Diligence is an axiomatic requirement; and there is a time limit within which claims to a particular invention shown, but not claimed, in an application may be added. *Ex parte Dyson*, 232 O. G. 755; *In re Fritts*, 45 App. D. C. 211; *Victor Talking Mach. Co.* v. *Edison*, 229 Fed. Rep. 999; *Christensen* v. *Noyes*, 15 App. D. C. 94; *Bechman* v. *Wood*, *id.*, 484; *Skinner* v. *Carpenter*, 36 *id.*, 178.

The statute itself lays down a *pre*-application rule of diligence and a *post*-application rule. Rev. Stats., §§ 4886, 4887, and § 4894.

Where an applicant has an application, showing, *inter alia*, but not at any time claiming, a particular feature, pending in the Patent Office for years, he should proceed at least within one year after the issuance of a rival patent for the same invention, to copy claims therefrom for the purpose of an interference, by analogy with Rev. Stats., § 4894.

The issue of a patent is constructive notice to the public of its contents. *Boyden* v. *Burke*, 14 How. 575–83.

If petitioners' divisional application be considered independently of the present application, they are out of court in their own admission of a prior public use of more than two years. If considered as a continuation of the parent application, *post*-application rules of diligence apply and they are guilty of lack of diligence.

Petitioners were never "regularly" prosecuting an application for the invention, and there is no basis in the statute or authority for the proposition that the mere presence of a drawing or description of a feature in an application constitutes a reduction to practice thereof such as will defeat a later inventor but earlier patentee. *Pittsburgh Water Heater Co.* v. *Beler Water Heater Co.*, 228 Fed. Rep. 683; *Saunders* v. *Miller*, 33 App. D. C. 456.

Mr. Melville Church, by leave of court, filed a brief as *amicus curiæ*.

Mr. John C. Pennie, Mr. Dean S. Edmonds, Mr. Charles J. O'Neill and *Mr. Helge Murray*, by leave of court, filed a brief as *amici curiæ*.

MR. JUSTICE CLARKE delivered the opinion of the court.

In 1909 Mathew T. Chapman and Mark C. Chapman filed an application for a patent on an "improvement in deep well pumps." The mechanism involved was complicated, the specification intricate and long, and the claims numbered thirty-four. The application met with unusual difficulties in the Patent Office, and, although it had been regularly prosecuted, as required by law and the rules of the Office, it was still pending without having been passed to patent in 1915, when the controversy in this case arose.

In 1912 John A. Wintroath filed an application for a patent on "new and useful improvements in well mechanism," which was also elaborate and intricate, with twelve combination claims, but a patent was issued upon it on November 25, 1913.

Almost twenty months later, on July 6, 1915, the Chapmans filed a divisional application in which the claims of the Wintroath patent were copied, and on this application such proceedings were had in the Patent Office that on March 21, 1916, an interference was declared between it and the Wintroath patent.

The interference proceeding related to the combination of a fluid-operated bearing supporting a downwardly extending shaft, and auxiliary bearing means for sustaining any resultant downward or upward thrust of such shaft. It is sufficiently described in count three of the notice of interference:

"3. In deep well pumping mechanism, the combination with pump means including a pump casing located beneath the surface of the earth and rotary impeller means in said casing, of a downwardly extending power shaft driven from above and adapted to drive said impeller means, a fluid operated bearing coöperatively to support said shaft, said fluid operated bearing being located substantially at the top of said shaft so that the shaft depends from the fluid bearing and by its own weight tends to draw itself into a substantially straight vertical line, means for supplying fluid under pressure to said fluid bearing independently of the action of the pump means, auxiliary bearing means for sustaining any resultant downward thrust of said power shaft and auxiliary bearing means for sustaining any resultant upward thrust of said power shaft."

Wintroath admits that the invention thus in issue was clearly disclosed in the parent application of the Chapmans, but he contends that their divisional application, claiming the discovery, should be denied, because of their delay of nearly twenty months in filing, after the publication of his patent, and the Chapmans, while asserting that their parent application fully disclosed the invention involved, admit that the combination of the Wintroath patent was not specifically claimed in it.

Pursuant to notice and the rules of the Patent Office, Wintroath, on April 27, 1916, filed a statement, declaring that he conceived the invention contained in the claims of his patent "on or about the first day of October, 1910," and thereupon, because this date was subsequent to the Chapman filing date, March 10, 1909, the Examiner of Interferences notified him that judgment on the record would be entered against him unless he showed cause within thirty days why such action should not be taken.

Within the rule day Wintroath filed a motion for judgment in his favor "on the record," claiming that conduct on the part of the Chapmans was shown, which estopped

them from making the claims involved in the interference and which amounted to an abandonment of any rights in respect thereto which they may once have had. The Chapmans contended that such a motion for judgment could not properly be allowed "until an opportunity had been granted for the introduction of evidence." But the Examiner of Interferences, without hearing evidence, entered judgment on the record in favor of Wintroath, and awarded priority to him, on the ground that the failure of the Chapmans to make claims corresponding to the interference issue for more than one year after the date of the patent to Wintroath, constituted equitable laches which estopped them from successfully making such claims. This holding, based on the earlier decision by the Court of Appeals in *Rowntree* v. *Sloan*, 45 App. D. C. 207, was affirmed by the Examiner in Chief, but was reversed by the Commissioner of Patents, whose decision, in turn, was reversed by the Court of Appeals in the judgment which we are reviewing.

In its decision the Court of Appeals holds that an inventor whose parent application discloses, but does not claim, an invention which conflicts with that of a later unexpired patent, may file a second application making conflicting claims, in order to have the question of priority of invention between the two determined in an interference proceeding, but only within one year from the date of the patent, and that longer delay in filing constitutes equitable laches, which bars the later application. By this holding the court substitutes a one-year rule for a two-year rule which had prevailed in the Patent Office for many years before the *Rowntree* decision, rendered in 1916, and the principal reason given for this important change is that the second application should be regarded as substantially an amendment to the parent application, and that it would be inequitable to permit a longer time for filing it than the one year allowed by Rev. Stats.,

§ 4894, for further prosecution of an application after office action thereon.

The question presented for decision is, whether this conclusion is justifiable and sound, and the answer must be found in the statutes and rules of the Patent Office made pursuant to statute, prescribing the action necessary to be taken in order to obtain a patent,—for the whole subject is one of statutory origin and regulation.

The statute which is fundamental to all others in our patent law, (Rev. Stats., § 4886, as amended March 3, 1897, c. 391, 29 Stat. 692,) provides with respect to the effect of a United States patent upon the filing of a subsequent application for a patent on the same discovery, which is all we are concerned with here, that any discoverer of a patentable invention, not known or used by others in this country, before his invention or discovery, may file an application for a patent upon it, at any time within two years after it may have been patented in this country. Such a prior patent is in no sense a bar to the granting of a second patent for the same invention to an earlier inventor, provided that his application is filed not more than two years after the date of the conflicting patent. The applicant may not be able to prove that he was the first inventor but the statute gives him two years in which to claim that he was and in which to secure the institution of an interference proceeding in which the issue of priority between himself and the patentee may be determined in a prescribed manner.

This section, unless it has been modified by other statutes or, in effect, by decisions of the courts, is plainly not reconcilable with the decision of the Court of Appeals; and should rule it. Has it been so modified?

The section of the Revised Statutes dealing with inventions previously patented in a foreign country (Rev. Stats., § 4887, as amended March 3, 1903, c. 1019, 32 Stat. 1225), provides that no patent shall be granted on an

application for a patent if the invention has been patented in this or any foreign country *more than two years* before the date of the actual filing of the application in this country.

Section 4897 of the Revised Statutes (16 Stat. 202, c. 230, § 35), in dealing with the renewal of an application in case of failure to pay the final fee within six months of notice that a patent had been allowed, provides that another application may be made for the invention "the same as in the case of an original application." But such application must "be made *within two years* after the allowance of the original application."

And in Rev. Stats., § 4920, providing for pleadings and proofs in infringement suits it is provided that when properly pleaded and noticed the defendant may prove in defense that the patent declared on had been patented prior to the plaintiff's supposed invention "or *more than two years* prior to his application for a patent therefor," and also that the subject-matter of the patent "had been in public use or on sale in this country for *more than two years*" before the plaintiff's application for a patent.

Thus through all of these statutes runs the time limit of two years for the filing of an application, there is no modification in any of them of the like provision in Rev. Stats., § 4886, as amended, and no distinction is made between an original and a later or a divisional application, with respect to this filing right.

A brief reference to the decisions will show that until ...e *Rowntree Case*, the courts had left the filing right under Rev. Stats., § 4886, as untouched as the statutes thus had left it.

There is no suggestion in the record that the original application of the Chapmans was not prosecuted strictly as required by the statutes and the rules of the Patent Office and therefore, it is settled, their rights may not be denied or diminished on the ground that such delay may

have been prejudicial to either public or private interests. "A party seeking a right under the patent statutes may avail himself of all their provisions, and the courts may not deny him the benefit of a single one. These are questions not of natural but of purely statutory right. Congress, instead of fixing seventeen, had the power to fix thirty years as the life of a patent. No court can disregard any statutory provisions in respect to these matters on the ground that in its judgment they are unwise or prejudicial to the interests of the public." *United States* v. *American Bell Telephone Co.*, 167 U. S. 224, 247.

In re-issue cases, where there was no statutory time prescribed for the making of an application for the correction of a patent, and although unusual diligence is required in such cases, this court adopted the two-year rule as reasonable by analogy to the law of public use before an application for a patent. *Mahn* v. *Harwood*, 112 U. S. 354, 363; *Wollensak* v. *Reiher*, 115 U. S. 96, 101.

To this we must add that not only have later or divisional applications not been dealt with in a hostile spirit by the courts, but, on the contrary, designed as they are to secure the patent to the first discoverer, they have been favored to the extent that where an invention clearly disclosed in an application, as in this case, is not claimed therein but is subsequently claimed in another application, the original will be deemed a constructive reduction of the invention to practice and the later one will be given the filing date of the earlier, with all of its priority of right. *Smith & Griggs Manufacturing Co.* v. *Sprague*, 123 U. S. 249, 250; *Von Recklinghausen* v. *Dempster*, 34 App. D. C. 474, 476, 477.

These, a few from many, suffice to show that prior to the *Rowntree Case*, the decisions did not tend to modification of the statutory two-year rule.

The Court of Appeals recognizes all this law as applicable to an original application, but it finds warrant for

cutting the time limit to one year in the case of later applications in three reasons, viz: Because it is inequitable to allow so long a time as two years for filing a new application, claiming a discovery for which a patent has issued; because such a time allowance is contrary to public policy, as unduly extending the patent monopoly if the new application should prevail, and, finally and chiefly, as we have pointed out, because, regarding such a later application as substantially an amendment to the original application the court discovers, in analogy to the time allowed by statute for amendment to applications (Rev. Stats., § 4894), a reason for holding that the failure for more than one year to make a later, in this case a divisional, application, amounts to fatal laches.

However meritorious the first two of these grounds may seem to be they cannot prevail against the provisions of the statutes (*United States* v. *American Bell Telephone Co.*, *supra*), and the third does not seem to us persuasive because of the difference in the kind of notice which is given to the applicant under Rev. Stats., § 4894, and that given him when a patent is issued conflicting with his application.

The one-year provision of Rev. Stats., § 4894, as amended March 3, 1897, c. 391, 29 Stat. 693, is that an applicant for a patent, who shall fail to prosecute his application within one year after Patent Office action thereon, "of which notice shall have been given" him, shall be regarded as having abandoned his application, unless the Commissioner of Patents shall be satisfied that such delay was unavoidable. But when a conflict between inventions disclosed in applications escapes the attention of the Patent Office Examiners, Rev. Stats., § 4904, and a patent is issued, with claims conflicting with the disclosures of a pending application, the applicant receives only such notice of the conflict as he is presumed to derive from the publication of the patent. In the one case the notice

is actual and specific, in the other it is indefinite and constructive only. When the great number of patents constantly being issued is considered, many of them of a voluminous and complicated character, such as we have in this case, with many and variously worded claims, such an implied notice must necessarily be precarious and indefinite to a degree which may well have been thought to be a sufficient justification for allowing the longer two-year period to inventors who must, at their peril, derive from such notice their knowledge of any conflict with their applications.

As has been pointed out, the Examiner of Interferences did not permit the introduction of any evidence with respect to laches or abandonment and the Court of Appeals rests its judgment, as he did, wholly upon the delay of the Chapmans in filing their divisional application for more than one year after the Wintroath patent was issued, as this appeared "on the face of the record." While not intending to intimate that there may not be abandonment which might bar an application within the two-year period allowed for filing, yet upon this discussion of the statutes and decisions, we cannot doubt that upon the case disclosed in this record, the Chapmans were within their legal rights in filing their divisional application at any time within two years after the publication of the Wintroath patent, and therefore the judgment of the Court of Appeals must be

Reversed.

MR. JUSTICE MCREYNOLDS dissents.